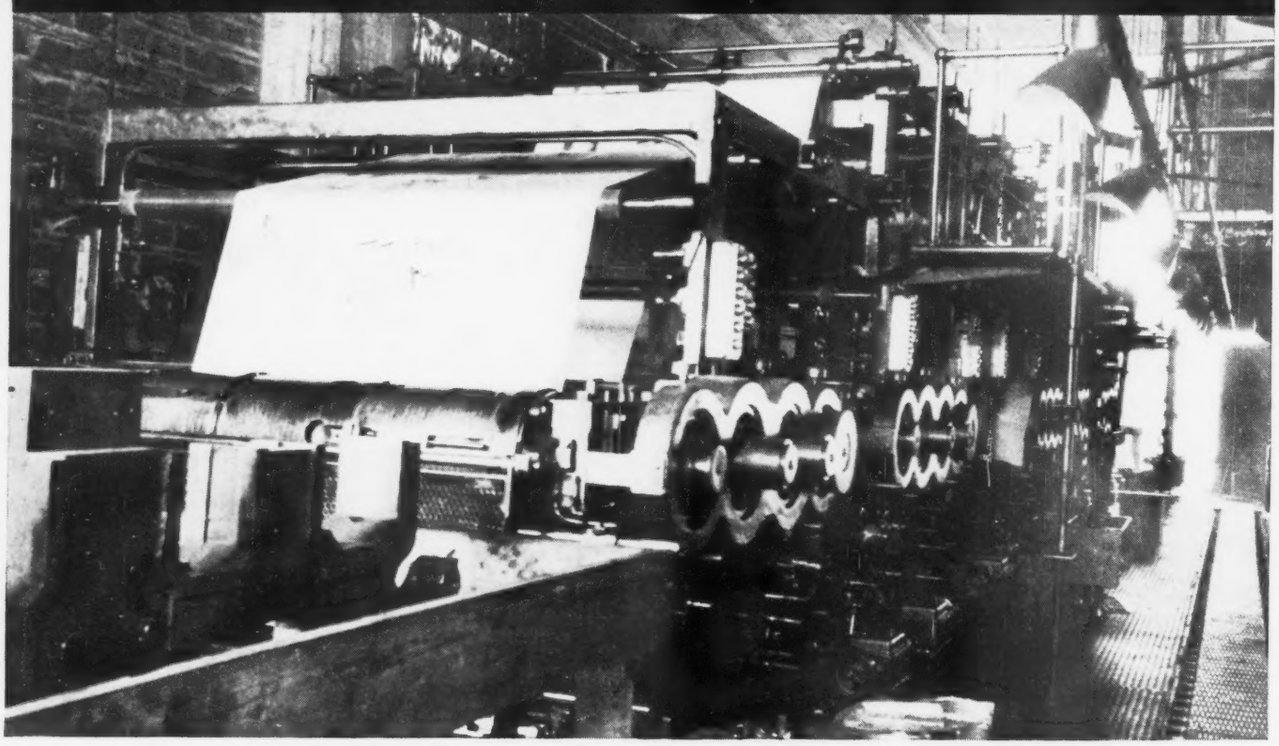
PRINTING EQUIPMENT ENGINEER

JULY • 1933

A Technical Publication for Mechanical Executives Responsible for Printing Production, Equipment and Supplies

SAYS THE MIAMI HERALD

"Our presses are equipped 100% with Goodrich Rollers"



• *View of the Miami Herald Press Room taken when starting the installation of new color press.*

ACCORDING to a recent statement from Mr. W. B. Sandlin, Mechanical Superintendent, The Miami Herald—Goodrich Printers' Rollers were first installed there in January 1926, on a Twin-Sex High Speed Hoe Press. At the outset this press was equipped in part with Goodrich rubber rollers and in part with gum rollers. Later the gum rollers were discarded and replaced by rubber rollers. "At the present time," says Mr. Sandlin, "our presses are equipped 100% with Goodrich Rollers, with the original rollers still running."

40% have been twice re-ground; the balance only once. Regrinding is now done at the printing plant.

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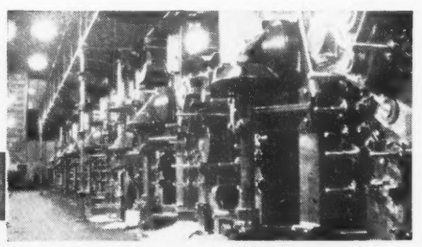
• *Another view of Press Room at the Miami Herald.*



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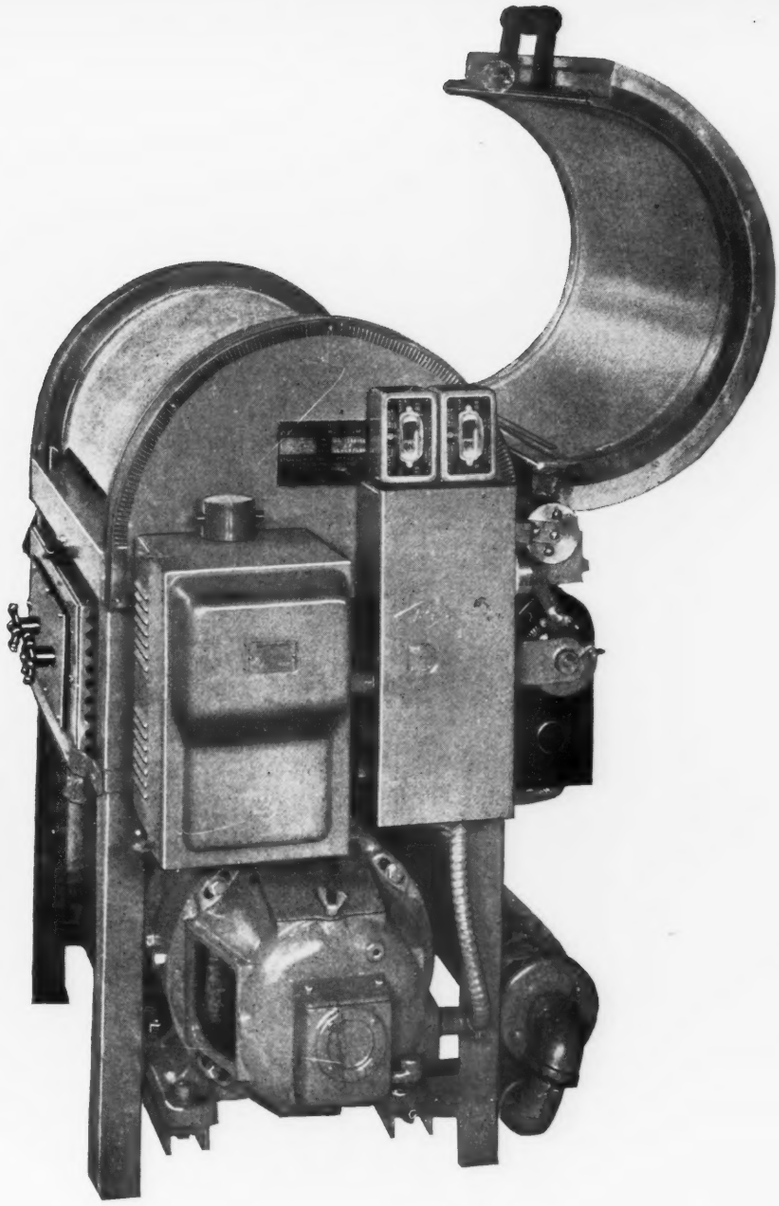

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PRINTING EQUIPMENT ENGINEER

TRADE-MARK REGISTERED U. S. PATENT OFFICE. ESTABLISHED 1910.

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JULY, 1933
NUMBER 4

DON WILL, Publisher — MacD. SINCLAIR, Editor

A Technical Magazine for Printing's Mechanical Executives

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Check in left column after reading. Note articles of interest.

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☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

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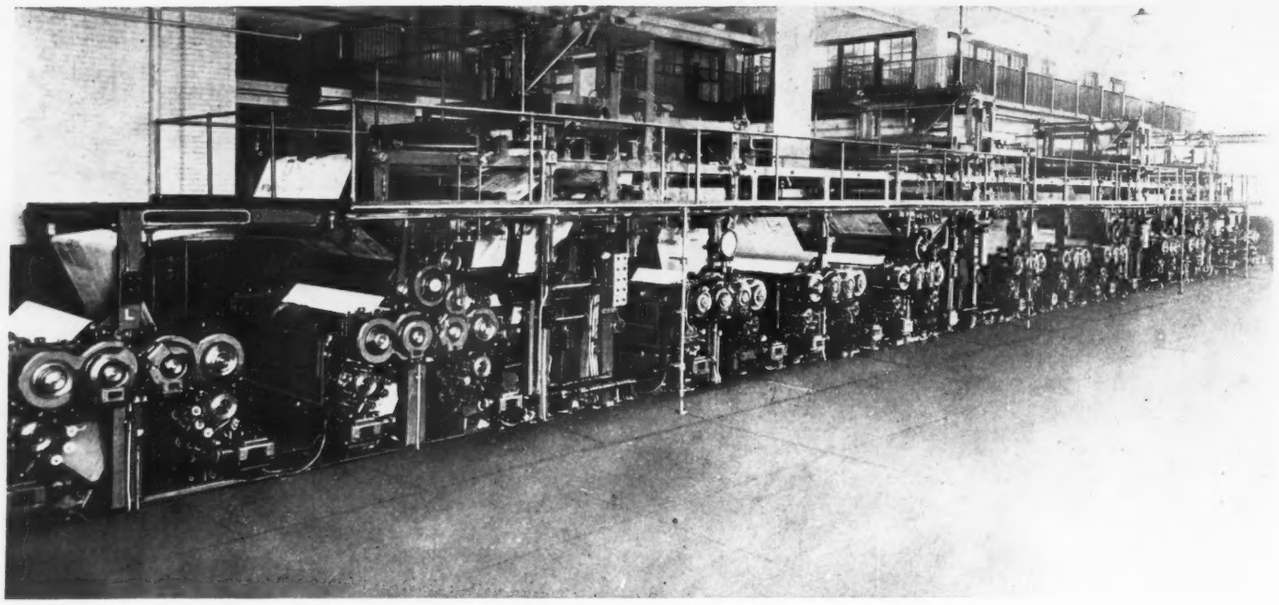

Stop Every Press!

Recall the Seventeenth Edition — We Missed the Financial Section!

LOADED trucks already off on delivery routes . . . messengers hurrying to stop them . . . excited voices shouting orders over telephones . . . rush copy on the hook . . . bedlam throughout the plant. Sixteen editions out O.K. but a major flaw in the seventeenth was discovered at the end of the run.

Checks for the prevention of this catastrophe are provided so that such an oversight seldom, if ever, occurs. Indeed, it would be quite costly to re-run every seventeenth edition.

Yet, during the normal course of production in the average composing room every "seventeenth edition" of machine composition actually is re-run. This really comprises a source of considerable, but reducible waste.

A national survey of original machine composition shows that of each 100 lines six (**6%**) are reset because of errors — one in every seventeen has to be "re-run." Assuming that only double time is necessary to set a correction line, **12%** (2×6%) of the average operator's time thus is devoted to non-productive effort. Hence, **18%** (6%+12%) of all operator-hours are spent in producing and correcting the lines which contain errors.

To this waste must be added the time of proof-readers and floor men in handling proofs, in detecting errors, and in placing corrections. Surely, composing rooms not only are throwing away every seventeenth edition but *re-running* it at many times its original cost.

But it isn't necessary to "re-run" every seventeenth line. By the application of our Black and White process to ordinary brass matrices — *making reference characters plainly visible to the operator* — a significant proportion of error waste may be eliminated.

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PRINTING EQUIPMENT ENGINEER
JULY, 1933

Advantages of Lithographic Halftone Dot Etching

By J. S. MERTLE*

UNDER this heading are included those methods of tone controlling halftone images in lithography by systematically reducing the dimensional area of the constituent dots comprising the image. Generally considered, all methods of this character employ gelatino-bromide process plates, on which a system of "etching" is carried out that very closely corresponds to the "minus etching" performed on copper plates by the photoengraver.

In other words, the lithographer no longer is required to laboriously retouch continuous tone images in order to effect corrections necessary for the accurate representation of the original in the course of reproduction.

Dot etching methods have attracted considerable attention in the last two years, so much so, that several of the country's largest litho establishments are employing it exclusively in all forms of monochromatic and polychromatic work. Though still in its comparative infancy, the method bids fair to supersede the older processes wherein tonal correction was effected by either straining or retouching the necessary negatives and positives.

A brief summary of dot etching is all that can be given within the prescribed limits of space. At the present time there are three methods before the American public employing this principle; these are, the Peridak method, perfected by the late A. J. Newton and Alexander Murray of the Eastman Kodak Company, the Hausleiter process developed by F. Hausleiter of Munich, Bavaria, and the method introduced in 1928 by Ellis Bassist.

A point of similarity in these processes is the use of a halftone positive on which staging and other protective applications of the photoengraver for the retention of dot value can be performed. Both the Hausleiter and Bassist methods are based on rehalogenization of the dry plate for further increase of the opacity of dot structure.

Suppose an oil painting is ready for reproduction. One of the main benefits of dot etching is the fact that the greatest majority of work entering the average litho plant can be advantageously produced in four colors. Contrast this with the array of extra colors usually required by older lithographic methods. The photoengraver very rarely uses more than four colors to achieve striking and beautiful results. Why cannot the lithographer, employing the same principles as the photoengraver, also produce his work with four colors?

With the previously mentioned oil painting at hand, the regular color records are made through the filters used in color photography. These color records may be either direct halftone or continuous tone. The latter method is more economical, since it does not require the use of large size and expensive process panchromatic plates (this condition is minimized in those plants using color sensitive collodion emulsion).

When direct halftone color records are made these are of the required scale of reduction. From the halftone negatives contact positives are made on process dry plates (several American manufacturers are offering special plates for this purpose) in a vacuum frame. These positives are developed to the greatest degree of opacity so as to reduce all the light affected particles of silver bromide to a state of quasi-metallic silver.

If the color records are in continuous tone a halftone positive is made in the camera to the required size. The same principle of development also applies for it is only by the retention of the greatest possible degree of opacity that the image will still retain perfect printing density when the dots in any particular area have been reduced to the required size.

Fixation and washing of the positive completed, the etcher determines just what corrections will be necessary in the image. In most instances a "flat" or general etch is given the plate to remove all evidence of halation. At this stage any areas that have arrived at correct tonal representation are protected from the etching medium (Farmer's Reducer, Iodo-Cyanide, etc.) by applying mixtures of asphaltum or similar water-repelling substances to the surface of the film. The plate is then again etched until the next areas have been brought to their correct tonal strength. This operation of

*Author and Instructor on Photo-Mechanical Subjects, Oshkosh, Wis.

staging and further "flat" etching can be repeated as often as necessary, the actual procedure depending on the strength of the positive and the degree of correction necessary.

In all instances, local reduction or re-etching will be advantageous in order to secure delicately blended highlights and shadows. Such re-etching is productive of results surpassing those of photoengraving because the dots can be reduced to the most minute size with entire elimination of the troublesome and expensive make-ready necessary for vignetted illustrations in letterpress. These dots are reproduced in all their beauty by the offset press plate, which obviously does not require printing depth such as is associated with the relief halftone on a copper plate.

When all corrections have been effected on the halftone positives, the protective applications of asphalt are removed with turpentine. Any areas requiring a solid printing surface are then opaqued on the halftone positive. Depending on whether albumin or "deep etch" press plates are used, will govern whether the positive is to be used directly as a printing medium or whether a contact negative must be made from the etched image. A negative is obviously required if albumin is used; such negatives are produced either on dry plates or by proprietary processes of dyeing bichromated images on glass.

With "deep etch" plates the etched positive is printed directly on the sensitized metal, thus affording a valuable synchronization between the camera and the offset press. This is the method which is becoming increasingly popular, primarily because of the elimination of the extra photographic process of contact printing for negative conversion and the greater durability and more efficient printing surface of the modern "deep etch" offset plate.

First Gannett Group Conference

The first Mechanical Conference of the Gannett Newspapers will be held in Elmira, N. Y., on Monday and Tuesday, July 17 and 18. It is estimated that over forty of the mechanical heads will attend this meeting. All the papers in the group will be represented. The following program is planned:

9:30 Monday morning, July 17—This session to be devoted to Engraving Room. Chairman William W. Spaulding, Foreman of the Albany *Knickerbocker Press and News* Engraving Room.

1:30 Monday afternoon, July 17—Devoted to the Composing Room. Chairman, Joseph Estabrook, Foreman, Utica *Observer-Dispatch* Composing Room.

6:30 Monday night, July 17—Dinner and Get-together at the Cold Brook Club, Elmira. Frank J. Genger, Mechanical Superintendent of the Elmira *Star-Gazette* and *Advertiser,* Chairman of the Entertainment Committe.

9:30 Tuesday morning, July 18—Devoted to the Stereotype Room. Chairman, Martin Redmond, Foreman of the Hartford *Times* Stereotype Room.

1:30 Tuesday afternoon, July 18—Devoted to the Pressroom. Chairman, John Mosher, Superintendent of the Rochester *Times-Union* and *Democrat and Chronicle* Pressrooms.

A long list of topics to be taken up at the different sessions has already been suggested by different members of the group. In addition to the topics suggested, John D. MacIntosh, Superintendent of the *Newburgh and Beacon News,* and Wm. F. Gallagher, Superintendent of the Ogdensburg *Republican-Journal,* will tell about the results they are obtaining with the teletypesetter; and Eugene D. Jagerski, Mechanical Superintendent of the Albany Gannett Newspapers, will explain how the Albany papers saved three-quarters of 1% of the paper bill by reducing the length of the roll from 68 to 67½ inches.

Letterpress versus Offset

By Frank O. Sullivan

There has appeared recently in the trade publications in the Graphic Arts field, considerable publicity calling attention to the inferior results obtained by the "rubber blanket" process of printing. In other words, it is asserted that offset lithography is an unsatisfactory method of producing printed matter.

These statements are worthy of some attention, inasmuch as the first offset press manufactured in 1906, has now grown to something over 3000 presses in active use in this country, and the number is still growing.

It has never been claimed that the offset press will kill letterpress printing, but rather that the wise printer will have a combination of both printing presses and offset presses in his establishment. It is then up to him to decide which jobs can be run to advantage on the offset press and which on the printing press. There is a certain point—in the length of runs—at which offset ceases to be economical and can be run to better advantage by the letterpress method.

It can be said, without fear of contradiction, that there are at least as many master minds at work solving offset problems, as in any other branch of the Graphic Arts. The Research department of the Lithographic Technical Foundation, Inc., is one of them. Others are the experts who are developing "dot etching" which admits of the offset printer doing in four colors work that used to be done in six, seven and eight colors. Another development is the "deep etch" offset plate that admits of much longer runs from press plates.

Offset lithography is merely a matter of progress and increased production, and will continue to improve and increase.

Mid-Year Meeting of International Trade Composition Association

The Mid-Year Meeting of the International Trade Composition Association was held at the Royal York Hotel in Toronto, Canada, on June 16 and 17. The address of welcome was delivered by James R. Booth, President of the Toronto Trade Composition Association. The response was made by Edward Libby, President of the International Trade Composition Association.

Reports of officers and committees were made, including the report of Commissioner Fred W. Hoch.

The National Industrial Recovery Act Plans Committee presented a suggested Code of Fair Competition during the afternoon session of June 16. Considerable comment was made on this suggested plan as the interest of most of the delegates attending this meeting was centered on this important question as to what the I. T. C. A. was doing in regard to this Act. The Code as suggested covered all the necessary requirements demanded by the Federal Act as well as the many desires of the industry regarding the trade customs. The Code was unanimously approved and adopted for presentation to the authorities at Washington when the proper time arrives. Commissioner Hoch was voted full power to comply with the requirements as set up in the Code and to present the Code for consideration of the Federal Authorities at the proper time. Delegates from approximately sixteen cities attended the meeting.

Great Interest in Deep-Etch Plates Justified

Say Authors—Greater Volume of Ink Can Be Carried, Resulting in Richer and More Lustrous Impression

By ELLIS BASSIST* *and* J. S. MERTLE†

CONSIDERED in the light of historical origin, the modern deep etch plate is nothing more than a modification of the method originally invented in 1881 by Goodwin, and afterwards improved by F. Vandyke, of the India (Calcutta) Survey Office. The latter method is especially interesting, since it employed one of the colloids used in modern plate making, to wit, fish glue.

In Vandyke's method (used for map reproduction) the grained litho metal plate was coated with a bichromated solution of fish glue and albumin. The sensitized metal plate was exposed under a translucent drawing or tracing, after which the image was developed in water and then dyed with a solution of crystal violet. The dyed negative design was then subjected to a dilute solution of ferric chloride, and after washing and drying, was rolled up thinly with an ink containing asphalt, lithographic ink and Burgundy pitch.

The ink plate was then immersed in water until the semi-insoluble glue forming the negative image could be removed from the metal. The resulting positive design was then treated in the lithographic manner for direct printing.

This, then, is the parent method of later improved processes, but their basic fundamentals remain identical with those of Goodwin. In all present systems of deep etch plate-making now in general application, a positive is required, excepting one or two experimental processes which endeavor to afford an intaglio image through metallic electrodeposition on the grained litho metal plate.

The great interest displayed in a method known for years, but only recently given sufficient attention by reason of economic stress, is justified by the superior results obtained from offset intaglio (deep etch) plates. Efficiently produced, such plates possess far greater durability than the regular bichromated albumin image heretofore almost exclusively employed.

No one will deny that cleaner and sharper results are effected in printing from deep etch plates. A greater volume of ink can also be carried, consequently resulting in a richer and more lustrous printed impression. The deep etch plate is particularly effective when synchronized with the lately developed methods of tone controlling halftone images through "etching" or systematic reduction of halftone positives.

Several methods of deep etch plate making are now employed in America, materials for which are supplied by the inventors. For purposes of general information, a brief resume of producing a deep etch plate along present accepted lines may be interesting to the reader.

A grained zinc plate is thoroughly cleaned and usually counter-etched with dilute hydrochloric acid. The sensitizing mediums for deep etch are as a rule bichromated mixtures of either fish glue or gum arabic, or combinations of both. Albumin is never employed for the purpose because of the great difficulty of removing the insolubilized negative design from the plate during the conversion to the required positive image.

With the zinc plate sensitized with a comparatively thick coating of the above colloids, a positive line or halftone image is then photoprinted on the metal. After exposure, the plate is developed either under the tap, or by the use of proprietary solutions wherein the use of water for the removal of soluble parts is not required. Prior to the development of the image, the entire plate is usually given a coating of an acid resisting varnish, which obviously remains on the insoluble areas and increases their acid-resisting properties.

When the plate has been completely developed it is dried and then subjected to the action of a mordant. The actual agents used in etching offset intaglio plates may be either ferric chloride, nitric or hydrochloric acids, or any other substance effecting a marked corrosion of the zinc surface. Actual depth of etching is dependent on the mordant used, the acid resistivity of the negative image and the duration of etching. Decided depth is not necessary—all that is required is a slightly incised image.

After etching, the plate is as a rule coated with an ink-attracting varnish, which possesses the additional feature of resistance to alkalis. Such varnishes are as a rule mixtures of resinous bodies, waxes, and lithographic ink. When a uniform film of such a varnish has been applied to the plate, the entire surface is then immersed in a water bath rendered slightly alkaline by the addition of a very small portion of caustic soda.

The insolubilized glue or gum image progressively softens in this bath and after a few minutes may be removed from the plate by brisk scrubbing with a hard bristle brush. With the removal of the negative image, the etched positive design coated with its film of ink-attracting varnish becomes the actual printing medium.

The cleanly developed image is then gummed up and rolled up with litho transfer ink, after which it is etched and is then ready for attachment to the offset press.

*Bassist Process Corporation, Milwaukee, Wis.
†Author and Instructor on Photo-Mechanical Subjects, Oshkosh, Wis.

The Importance of Rollers for Offset Lithography

Since Senefelder's Development, Improvement of Rollers Has Kept Pace with Improvements in Processes and Presses

By E. L. TRAVERS*

WHEN Alois Senefelder, "the Father of Lithography," had developed his press and process, he encountered the same difficulty as the letterpress printers—that of a satisfactory method of distribution of ink. Like the letterpress, the first inking device was the ink ball. It was Alois Senefelder who perfected the leather roller for use on lithographic presses, and in his memoirs we find the following notation: "It is surprising to see what a difference it makes if one has worked for a time with a poor roller and then replaces it with a good one. It is almost impossible to believe that the new impressions come from the same stone. I think the quality of the ink roller has more effect on good impressions than the quality of the printing color." Since those days there have been many improvements in processes, presses and all the mechanics that make up lithography, including the roller. Where stone presses are in use, there is still a demand for leather rollers, but these are disappearing rapidly.

The offset press required a different type of roller, not for improvement in the quality of the work, but to eliminate the time spent in washing leather rollers. The rollers replacing the leather rollers are of oil or rubber composition and are washed up in the machines quickly and easily. The roller to give good service must have enough resilience to give the right surface spread and create sufficient vacuum as it passes over the plate to clean the edges of the image, and keep the plate perfectly clean. The form rollers should have a slight grain effect to enable them to carry the correct amount of ink, and at the same time prevent the rollers from skidding on the plate so as to avoid wear and roller streaks. This fine grain effect is necessary to meet the water condition that the plate carries. It causes the rollers to pass over the water rather than push the water before them.

The proper way to set a roller in an offset press is to loosen, or slack off, the locking device, and place the inside form roller in the box. Adjust it evenly on the printing plate, which is packed to the proper size. With the rollers dropped, or lever down, place a strip of strong 3-point smooth paper under each end of the roller, between the printing plate and the roller, to test for even contact. Next place the steel rider in the box, making sure it is down as far as it will go, again using papers to get an even contact with the inside roller, using the adjusting screws in doing the same. The papers should have the same tension on both ends of the roller; that is, tight enough to pull out without breaking. Then the roller should be locked securely. Take out the steel rider and place the outside roller in the roller socket, and set it even on the plate, replace the steel rider, and bring the form roller in until you have an even contact. This should be done gradually, so the roller will adjust evenly, using the strips of paper to test the contact. To test the setting, ink up and drop the rollers or lever down so that all form rollers rest on the plate. Inch the press, raise the rollers, and let the press run. Drop the rollers a second time. They should leave a straight mark about a quarter inch wide from end to end on the plate. If in doubt as to setting on the steel riders, drop rollers or lever down in cylinder gap and try with the feelers. Another check can be made with a pair of inside calipers. If the rollers are set perfectly the distance between them should be the same on both ends.

The average life of an oil or rubber roller varies from eighteen months to two years. They are washed up in the press by the roller-washing machine. While pressroom superintendents differ as to the wash-up fluid (this being a matter of preference) quite a number are using three-quarters gasoline and one-quarter kerosene.

Leather rollers are practically in the discard owing to the length of time required to wash up, but for the benefit of those still interested in them owing to the class of presswork they produce, we have a few comments to make. The leather for these rollers is carefully selected as to size, weight and freedom from blemishes such as grub bites, cuts, vein marks, hard or soft spots and small necks. The percentage of hides obtained for lithograph leather is ten to a thousand, and these hides are cut into roller covers, sewed and pulled on flannel-covered stocks. The grain side of the leather is used for form rollers, and this surface must be kept soft and pliable as velvet, but with perfect inking qualities. It can be kept in this condition for many months if the rollers are carefully cleaned and water marks are removed with sandpaper as soon as they appear. Grain rollers should be greased well when not in use to keep them soft and pliable. Smooth rollers do not require so much attention. They do not come in contact with the plate so are not injured by water. When a leather cover loosens on the roller, take the roller out at once, have the leather firmly stretched down and fastened at the end. This will give twice the wear from your leather roller. For breaking in leather rollers, place the roller on the cleaning tank, and apply No. 3 varnish over the surface evenly. Apply as much varnish as the roller will absorb, then scrape off the excess varnish and apply No. 5 varnish. After the press has been washed up, put the rollers in and run them for one and a half hours. This will work the varnish in and make the rollers more pliable.

Over a long period of time the water or dampener rollers on both stone and offset presses have been built up with a lithograph flannel base and then covered with molleton. These are the rollers that cause streaks on the plate, either from the seam being high, the stitches wide, or the molleton fuzzy. On the majority of tin presses, moleskin is used as the final covering for the water or dampener rollers, with a lithograph flannel base. Rubber is also used as a base for dampener rollers, and with a very heavy molleton cover, eliminates the use of flannel, although a thin flannel under the molleton holds and gives out water somewhat better.

Where dampener rollers are built up with six or seven thin covers, fastened carelessly on the ends, these ends will extend so far beyond the body of the stock that they will in most

Continued on page 16

*National Association of Printers' Roller Manufacturers, Inc., New York, New York.

A.N.P.A. Mechanical Department Functioning Well

Dry Mat Standardization and Other Important Undertakings Discussed at Pittsburgh Conference

THE A. N. P. A. Mechanical Department is still functioning in the ascendancy and it appears that there is a great deal yet to be done before its major objectives will have been accomplished. In fact, achievement of the ultimate in newspaper production seems to be as unsettled as ever, especially in view of other processes in the offing which may eventually compete with the present black-and-white sheet as we know it.

The technical data gathered by the Mechanical Department, together with the recorded conference proceedings, have been largely instrumental in helping to produce a new type of newspaper mechanical executive, who like executives in other industries goes about his profession in a truly technical manner. The rule-of-thumb methods are fast disappearing. The mechanical executive today must be prepared to accommodate his methods to fast-changing conditions in the industry.

Walter E. Wines has every reason to be proud of the accomplishments of the Mechanical Department since his services to the members have been a considerable factor in developing today's better printed newspaper.

If there is any criticism at all to offer about the Pittsburgh Conference, it is that too much was attempted for the amount of time allotted, not that the subject matter was not interesting but there was not enough time for everyone to make sufficient comment or obtain all the information wanted after the principal speakers had finished.

Barnard F. Garrity, Mechanical Superintendent, Hartford (Conn.) Times; *J. A. Burke, Production Manager, Gannett Newspapers; John E. Mosher, Rochester (New York)* Times-Union, *and Walter Morey of the Teletypesetter Corporation.**

The attendance at the Pittsburgh Conference in June is the second largest since establishment of the Mechanical Department, being exceeded only by the Buffalo Conference in 1929.

There was some informal discussion among the mechanical executives about advancing the conference dates to the middle of May or holding it during the month of October. In all probability, Manager Wines and the mechanical committee will take some action in the matter.

OLD MAN HUMAN ELEMENT BOBS UP

Old Man Human Element bobbed up repeatedly in the Conference discussions. We have often thought of him as a much neglected entity at some of the previous mechanical conference, but our ideal of a mechanical executive being a student of human nature received ample recognition at the June meeting. It is obvious that he is a mighty important factor after all in producing a daily newspaper.

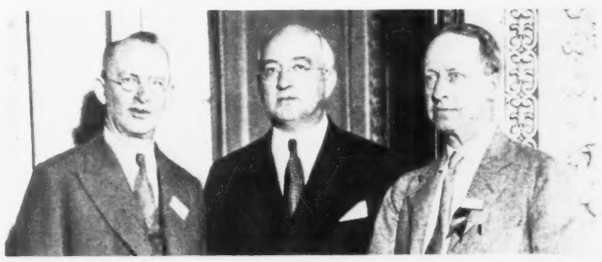
*Photos through courtesy of *Editor and Publisher*.

The very first day's sessions on coordination of editorial and mechanical departments shows how successful operation of departments depends on the human element. Messrs. Oliver Owen Kuhn, Paul Bellamy, Leon Link, Edward J. Duffy and others paid considerable attention to the importance of this phase of newspaper production.

The writer is not prepared to say whether any editor could satisfy the average composing room superintendent in respect to the costly items of overset, late cuts, late pictures and other late copy which may result in increased operating cost or in a bottleneck condition so far as getting to press is concerned. Sometimes, perhaps frequently, he sees the necessity for loading the force in order to protect himself against the anticipated condition.

These things strike the composing room executive's "sensitive spot" since he knows full well that he will be called upon to answer questions in respect to increased costs which may be caused by the apparent lack of cooperation from other departments.

In explaining the benefits to be derived from the employment of a controlled schedule for the maintenance of line-



Frederick H. Keefe, Published, Newburgh-Beacon (New York) News; *Oliver Owen Kuhn, Managing Editor, Washington (D. C.)* Star, *and W. E. Wines, Manager, Mechanical Department, A. N. P. A.*

casting machines in the plant of the Des Moines *Register-Tribune*, Mr. Link mentioned that the parts and supplies expense had been reduced one-third since installation of the system. In addition to this, Mr. Link doubtless meant to convey that the use of such a system also increases production, eliminates breakdowns at critical times, makes for contented operators, gives the machinist a sense of satisfaction in a fine running plant free from petty annoyances and gives the superintendent peace of mind—and production.

Mr. Link also urged the establishment of a standard newspaper composing room cost system and hoped that the Mechanical Department might adopt such a system.

A cost system may not mean anything to a newspaper in a city where competitive conditions are strained, but it would at least help determine how much is being spent on reconstruction and other costs to meet highly competitive conditions.

THOROUGH AND INTELLIGENT LEADERSHIP NEEDED

Edward J. Duffy, mechanical superintendent of the New York *Daily News* stressed the importance of the human element as it affects economy and efficiency in newspaper pressrooms, as follows:

> Thorough and intelligent leadership is needed in newspaper pressrooms for obtaining economy and efficiency.
>
> The human element is a factor, and a large one, that requires and demands serious consideration.

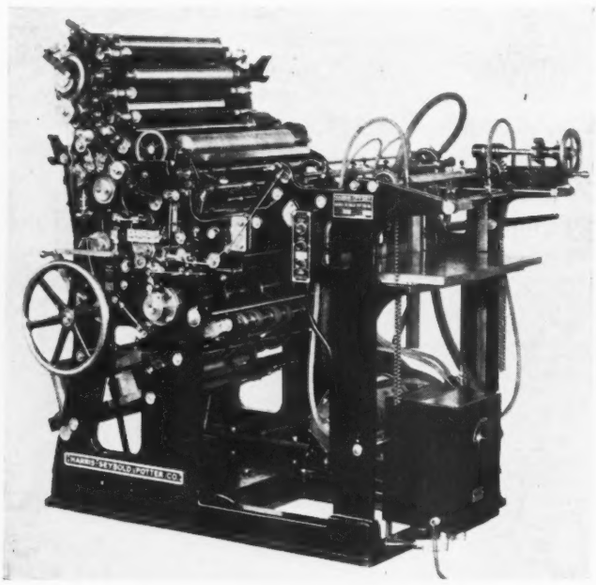
Continued on page 14

Latest Printing Equipment Mechanisms

New Harris Offset Press

A new small offset press has been announced by the Harris-Seybold-Potter Company, Cleveland, Ohio. The new Harris, model LSB, is a single-color press.

Features of the press are the reciprocating type suction pile feeder (height of feeder pile 20 in.), positively controlled sheet jogger delivery, three-point register, tumbler grippers, push side guide, and a speed of 6,000 to 7,000 impressions per hour. Minimum sheet is 8½ in. by 11 in., maximum, 17 in. by 22 in., blanket 23 in. by 23¾ in., plate size 20 in. by 23 in.



"The new press," according to H. A. Porter, Vice President in Charge of Sales, "retains in its small size the inherent advantages of the larger offset presses."

This offset press comes equipped complete with roller and electrical equipment. Floor space required is 4 ft., ¼ in. by 6 ft., 2⅛ in.; height is 5 ft., 7¾ in., net weight is 4000 lbs., and a ½ h.p. blower motor is furnished.

This press completes the small Harris press group, the others being the CL—19 in. by 25 in., and the EL—22 in. by 34 in.

Hoe Two-Color Super-Offset Press

The new Hoe Two-Color Super-Offset Press has been announced recently to the offset printing industry by R. Hoe & Co., 138th St. and East River, New York, New York. One of the many features is that the plate, blanket and impression cylinders are all of even or one-to-one diameter. The impression cylinder grippers hold the sheet while both colors are being printed, thus insuring accurate register and high-class reproduction of fine screen work. The machine is of extra heavy construction. Press and delivery frames and motors are mounted directly on the bedplate. All cylinders are mounted in one-piece side-frames without capped openings to insure rigidity and are so constructed that cylinders may be removed without dismantling the side frames. The press is driven by a direct-connected motor through a standard worm gear reduction unit.

The impression, or central cylinder, is driven by helical gears from the main drive outside of the press side-frames, while the other cylinders are driven by a separate set of helical gears, taking drive from the impression cylinder and which are attached direct to the bodies of the cylinders, thereby distributing the load on gear teeth. The ink and water motions are each driven by separate sets of gears. The ink vibration is adjustable for stroke and is driven from the main drive of the press.

The water form rollers are of the ball bearing type, while the distributing and fountain rollers are made of a special alloy which does not require cleaning. A number of methods for regulating the amount of water required for the various classes of work have been provided, such as changing the speed of the fountain roller, the length of the ductor dwell against the fountain roller and the number of contacts of the ductor roller per impression. The ink distribution consists of five large diameter ball bearing form rollers, six covered distributing rollers in contact with six vibrating ink cylinders.

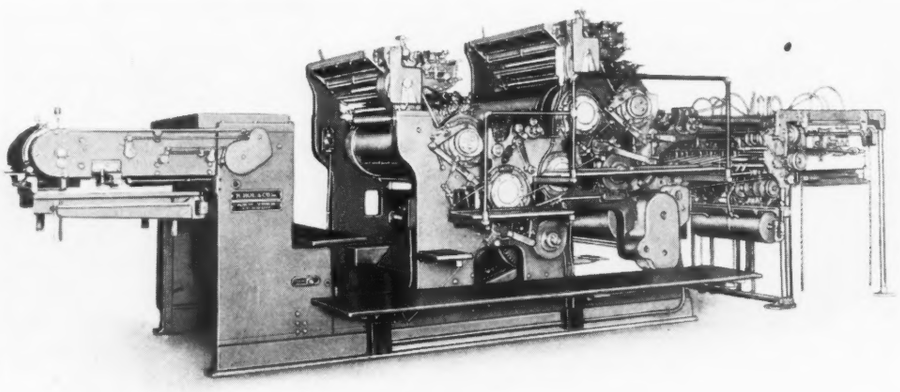
Journals of all cylinders run in extra heavy roller bearings which eliminate all radial and end play. The plate-clamping means handles zinc plates without distortion.

The Hoe feed mechanism requires no attention after adjustments have once been made. Register can be maintained with the new Hoe improved register mechanism at high speed and the front lay of the sheet can be changed without stopping the press.

The delivery gripper bars are equipped with self-aligning gripper pads which require no attention for setting. The delivery elevator is operated by a separate motor for fast raising or lowering of the pile and is so arranged that exit may be made from any one of the sides.

The press is entirely automatic in all its operations, such as cylinder trip, ink feed, lowering of delivery pile, raising or lowering of ink rollers. The two blanket cylinders are the only cylinders tripped. The ink form rollers are in inking position before reaching the plate, a separate trip guiding them into an opening or gap of the plate cylinders. Adjustments for printing various thicknesses of stock are made by adjusting blanket cylinders only, none of the other cylinders are adjusted or tripped at any time. Either color may be operated separately at any time without disturbing or making any

Continued on page 22



Economies in Rubber Roller Upkeep

By JOHN H. SHEEHAN*

Continued from the June ENGINEER. *Last month Mr. Sheehan explained why rubber rollers must be ground, as well as the benefits to be derived from grinding. This month he tells how the work should be done.*—ED.

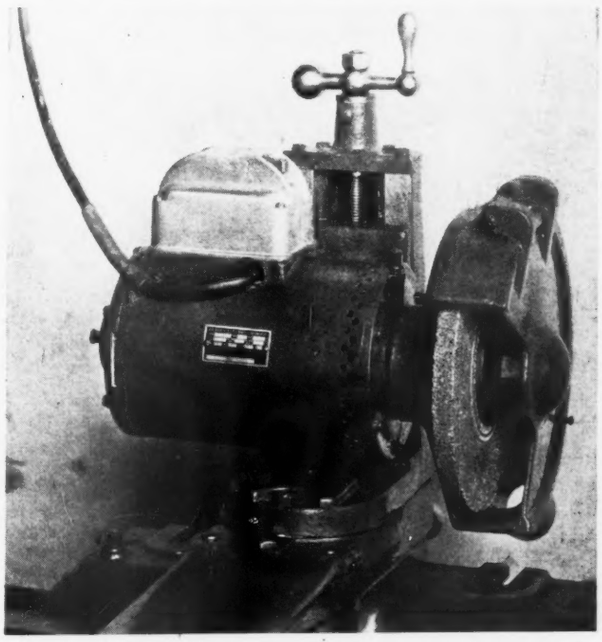
THE most practical method of mounting a roller, as shown by best usage, is to use special journal support fixtures having adjustable split brass bushings in which the roller revolves identically as though it were in the press, in its own bearings.

ELIMINATE END THRUST

Rollers without shoulders should be protected from "end thrust" by using thrust collars to take up the slack. After grinding, which can usually be accomplished with two roughing cuts and one finishing cut, the roller is polished.

THE GRINDING WHEEL

For the grinding itself, no iron-clad rules can be laid down. The practice must vary slightly to meet the needs of the particular type of roller being ground. It may be said, however, that one grinding wheel can be used both for finished and



Grinding head for printing press rubber rollers. Note coarse grinding wheel and opening in wheel guard where dust collector may be attached if it is desired to confine the waste rubber particles.

rough grinding. Best results have been obtained by using a 10 in. carborundum brand 10-grain wheel with a 1 in. face.

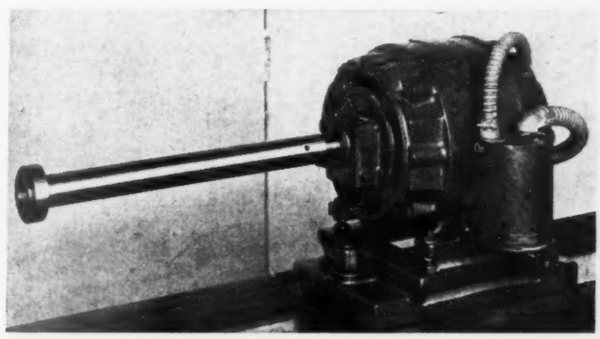
GRINDING SPEEDS

After extensive experimenting with high and low speeds, it has been found that the speed of the grinder should be 1750 r.p.m., with the grinding wheel mounted directly on the shaft of a 1 h.p. motor. The grinding wheel should be set at about a 1 deg. to 2 deg. angle so that about 1/32 in. clearance is left, to keep the wheel from dragging. Most of the work is done by the corner of the wheel and it, therefore, must be kept square and true. Feed of the grinder should be in one direction only, from tail to headstock of the lathe.

*Technical Service Department, South Bend Lathe Works, South Bend, Ind.

THE VARIOUS CUTS

The aim of the first rough cut should be to get down under the ink penetration and to reduce the roller to approximately its original diameter. A reduction of as much as 1/4 in. diam. can be obtained by taking a 1/8 in. cut, if desired. The cut should be taken at medium back-geared lathe speed, using the coarse feed of about five revolutions of roller to each inch of grinder travel, at five thread feed per inch, using leadscrew feed. The second, or truing rough cut, should remove about 0.002 in. Use a finer feed or about 20 revolutions to each inch of grinder travel for the third, or finishing cut. Under ordinary conditions, these three grinding cuts are all that will be required.



Detail photograph which shows close-up of polishing motor resting on tail end of lathe bed. This unit operates at 1200 r.p.m. The large plant, however, should use a special polishing lathe.

POLISHING THE ROLLER

For polishing the rollers, in the average shop, it is most practical to use a 1200 r.p.m. polishing unit mounted on the tailstock ways of the lathe bed. The very large shops should use a special polishing lathe. In handling the polishing operation, the driving dog is removed from the headstock end of the roller shaft and the shaft is revolved directly by the polishing unit, by means of an extension coupling with a contracting collet and sleeve arrangement.

Although a mechanical polisher may be used, it has been found most practical to polish by hand using 60-grain aloxite brand abrasive for rough polishing and 150-grain aloxite brand abrasive cloth for finished polishing. Apply powdered soapstone freely to the surface of the roller during the polishing process.

TIME REQUIRED FOR GRINDING

The time ordinarily consumed in reconditioning the average large form roller will vary from two to four hours. That will include setting up, grinding and polishing. Electric current consumed in four hours will cost less than twenty cents. When to this is added the mechanic's wage it is readily apparent that an extremely reasonable cost is involved.

EQUIPMENT HAS OTHER USES

In addition to grinding and polishing rubber rollers, the same lathe is used by many mechanical superintendents for general machining and grinding work, for emergency repairs and for general maintenance. The screw-cutting lathe will, of course, handle all kinds of turning, facing, boring, reaming, drilling, tapering, grinding, and screw thread cutting operations.

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A.N.P.A. Mechanical Department Functioning Well

(Continued from page 11)

I do not mean to convey that that alone is the all-important factor. There are other important items which lend themselves to the successful operation of this department. The management enters the picture on a large scale at this point, regarding the quality of materials given to the pressroom to work with, such as paper, blankets, rollers, ink, plates and equipment in general. With equipment and materials right, along with intelligent leadership, and the will and proper spirit to accomplish things, economical production and quality can and should be constantly obtained.

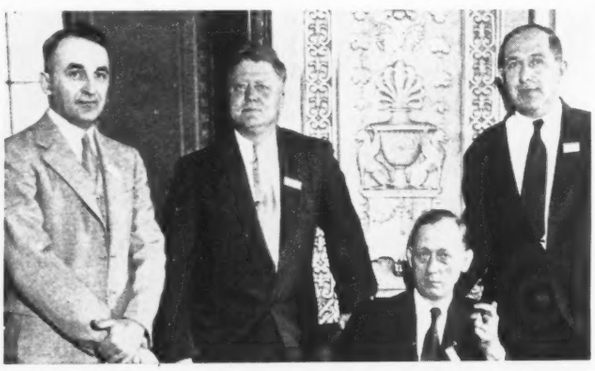
In respect to rubber rollers for newspaper presses, Mr. Duffy said:

Another important factor in economy is the roller question. I do not believe there is a pressroom of any size anywhere today that can afford to be without the rubber roller. . . . When one considers that atmospheric conditions have no effect on rubber rollers, along with the fact that washing of rollers is dispensed with, and further, that you have a clean set of rollers at all times to deposit the ink upon the forms, those facts, I am sure, are reasons enough for using rubber rollers.

Mr. Duffy also paid his respects to economies in the pressroom by stressing the importance of proper paper handling, inspection of blankets and keeping records of impressions obtained, perfect alignment of cylinders, flying pasters and the elimination of obsolete equipment.

DRY MAT STANDARDIZATION

One of the important activities of the Mechanical Department (the standardization of dry mat specifications) seems to be accomplishing results.



S. S. Wieskittel, Pressroom Superintendent; Leo Moorman, Stereotype Foreman; Sid Gilroy, Composing Room Superintendent; and H. D. Rindsberg, Mechanical Superintendent, all of the Cincinnati Enquirer.

At the Cincinnati Conference, Arthur H. Burns, mechanical superintendent of the New York *Herald-Tribune*, suggested that perhaps the dry mat manufacturers would reduce the price if the consumer could obtain a smaller size (area) dry mat. Manager Wines was asked by the conference to confer with the mat manufacturers to see whether a corresponding decrease in price could be allowed if a smaller-sized dry mat was furnished. The dry mat manufacturers showed that the saving to the consumer in materials cost alone for a smaller size dry mat would be negligible. They proposed, however, that the remedy for any saving in dry mat prices rested not so much in reduction of dry mat sizes but considerable savings could be made if users would standardize on dry mat specifications in the way of thickness, moisture content in combination with length and width measurements.

Manager Wines made a survey during the past several months and submitted a report to the Pittsburgh Conference in tabulated form. The report is based on a questionnaire which was mailed to the A. N. P. A. membership. Some interesting figures were produced as a result of the submission of the questionnaire.

Out of a total of 278 replying members buying mats made by eight manufacturers, the percentages of customers, percentages of mats used of each make and the total volume used are as follows:

MAT CONSUMPTION

Manufacturer	Number Customers	Per Cent Customers	Mats Used	Per Cent Mats Used
1	5	2	119,400	2
2	87	31	1,259,408	24
3	47	17	843,850	16
4	20	7	229,850	4
5	3	1	30,500	1
6	79	29	1,907,912	36
7	2	1	52,000	1
8	35	12	817,256	16
Total	278	100	5,260,176	100

In respect to mat size, thickness and moisture or shrinkage specifications there is considerable variation. The report of the manager does not give any data as to why mat users demand such a wide variation in specifications. Perhaps it is due to preferences which might be founded on purely personal opinion which in turn have not been based on practical laboratory research, or it may be due to custom, which might have had its origin in an effort on the part of the manufacturer to please the customer.

Henry C. Zenke, Mechanical Superintendent, New York Staats Herold, *and William L. Fanning, Treasurer and Business Manager, Westchester (New York) Papers.*

The tabulation of mat sizes (length and width) specifications are shown here:

MAT SIZE (Length and Width)

Manufacturer	Number	Per Cent Customers	Wish Change in Size	Per Cent	Do Not Wish Change in Size	Per Cent
1	5	2	4	2	1	..
2	87	31	54	20	33	12
3	47	17	34	12	13	5
4	20	7	13	5	7	2
5	3	1	3	1	..	..
6	79	29	57	20	22	8
7	2	1	..	..	2	1
8	35	12	29	10	6	2
Total	278	100	194	70	84	30

In thickness specifications, the report shows a wide variation in users' demands which runs from 0.024 to 0.039 in. J. M. Harding, mechanical superintendent of the South Bend (Ind.) *Tribune*, thought that mat manufacturers might be responsible for the variations in that they recommended certain thicknesses and other dimensions for certain kinds of printing equipment.

The thickness specifications of the survey are like this:

THICKNESS SPECIFICATIONS

Manufacturer	Number Customers	Number of Requirements	Range of Requirements
1	5	5	0.031 to 0.034 in.
2	87	17	0.024 to 0.034 in.
3	47	22	0.024 to 0.036 in.
4	20	12	0.025 to 0.037 in.
5	3	3	0.032 to 0.035 in.
6	79	22	0.024 to 0.039 in.
7	2	2	0.031 to 0.035 in.
8	35	15	0.024 to 0.036 in.
Total	278	98	0.024 to 0.039 in.

At Wednesday evening's session, George H. Fuller, stereotype superintendent of the Cleveland *Press*, while talking on stereotyping problems, showed that users are at least partly to blame for the wide variation in dry mat specifications when he said:

Many newspaper publishers appear to be considering the advisability of going to 67½ in, and even 67 in. newsprint in order to

Continued on page 20

Photo-Lithography and Offset-Lithography

Photographic Films are the Most Convenient Material for Quick and Efficient Production of Black-and-White Work in Offset Process

By FRANK O. SULLIVAN, *Department Editor*

PHOTOGRAPHIC films have been in existence many years, but the first practical use of this medium in offset lithography in this country dates back to 1924, when Dr. William Heinecke introduced "Typon Reflex Paper" in the United States. The method in use with this film was based on the reflectographic principle (reflex action of light); a negative was made from a printed page by laying the film face down on the type page—the white paper reflecting light into the film, while the black type absorbed the light and thus exerted no action on the sensitive emulsion.

While interesting, the method was not entirely satisfactory. A plan of employing the film directly in the camera was suggested by Ellis Bassist, then technical director of offset lithography for the F. Wesel Manufacturing Company. Bassist improvised a wooden frame for holding the paper in a plane position similar to that occupied by the wet collodion plate, and the succeeding results emphatically verified his contentions.

The Typon paper possessed certain inherent defects, a state of affairs that led to the conception of a more perfect film of American manufacture. In conjunction with his associates, Dr. Heinecke evolved new formulas and methods, eventually producing what is now known as "Contrasto Non-Strip Film," "Contrasto Strip Film," and the "Contrasto" film.

Photolithographers quickly realized the advantages of these films, particularly for black-and-white work, and many of the smaller establishments soon were using them to the exclusion of the wet collodion process. Photomechanical films are now in international use, and are manufactured in the United States by the Polygraphic Company of America, the Eastman Kodak Company, and the Agfa-Ansco Company.

Improved devices have been perfected for holding the film plane in the camera in a quick and convenient manner, formulas and photographic details are furnished by the respective manufacturers.

In general, exposures on stripfilm bear a close similarity to those on wet collodion plates. After exposure, the film is placed in the developer, where the tendency of the film to curl is automatically overcome by saturation of the emulsion by the developer. On completion of development the film automatically leaves its paper support.

Wherever practical, development should be carried out by time and temperature method; actual details will vary according to the particular film used, but in all instances the aim should be retention of clear lines and an opacity sufficient to insure clean images on the press plate.

About one-half minute fixation is usually sufficient, depending obviously on the type and strength of the hypo bath used. The appearance of the film will designate when fixation is complete as all milky traces of undissolved silver salt must be entirely removed.

Because of the comparative thinness of the stripfilm negative, protracted washing after fixing is not necessary. The washed film may then be stripped in contact with either glass, celluloid or glassine paper. A popular method entails the employment of a good grade of glassine. Where halftone film negatives and line stripfilm negatives are used, glass is doubtless the most reliable support on which to carry out the stripping operations for both negatives.

With moderately good originals that have been correctly exposed and developed, there should be no necessity of reducing or intensifying operations on film negatives. Such operations can, of course, be carried out with any of the standard agents employed for dry plates, but the careful photographer through the agency of proper lighting and accuracy in exposure and development, will secure a printable negative from all except the poorest types of originals.

Actual stripping of film negatives follows along the lines employed for wet collodion. The images are squeegeed down on their supports with a rubber squeegee. Care should be taken to smooth the film down perfectly for the avoidance of all air bubbles between the film and support.

The negatives should be completely dry before photoprinting in the sensitized press plate. The thin film usually dries rapidly (except where great humidity prevails in the work room), but precaution must be taken to see that the glassine support (if used) is entirely dry before photoprinting is attempted. If negatives are not required for immediate use, they may be placed between blotters to dry, and then, when ready, can be placed in water and stripped down in the usual manner.

A sensitized press plate is laid face up in a vacuum printing frame, the orange sheet containing the negatives placed face down on the plate, and then exposed to an arc light. After proper exposure, the plate is developed under running water, etched in the usual manner, dried, rolled up, and is then ready for attachment to the press.

A Standard Newspaper Composing Room Cost System

Iowa Executives Adopt a System Which They Believe Will Be Practical in Any Iowa Newspaper Composing Room

By MAC SINCLAIR

THE question of a standardized newspaper composing room cost system which might be adaptable to any newspaper composing room has received consideration from time to time by individual executives throughout the country but no organized effort seeking to have such a system universally adopted has taken place.

Inclusion of all the chargeable items which should go into the making up of a suitable cost system would seem to be a perplexing problem and at the same time would make such a system a complicated operation. Such, however, is not the case.

Some newspapers employ "page cost" methods which are nothing more nor less than blanket coverage systems and do not reflect true composing room costs, nor does a "page cost" system answer many questions which arise due to the varying column or inch content of pages, some of which cost more than others according to the nature of the composition.

ADVANTAGES OF COST SYSTEM

Then, too, depending upon whether business is good or bad, construction costs bring up many embarrassing queries from the management which cannot be answered intelligently by the average composing room executive. When a system is used which does not indicate unit costs adaptable to the various kinds of composition which go into the makeup of a newspaper page the composing room executive is usually at a loss to explain apparent excessive costs of composing room operation simply for the reason that he is not fortified with detailed facts.

In common with R. J. Barrett, T. F. McPherson and other newspaper cost experts, PRINTING EQUIPMENT ENGINEER has consistently advocated the adoption of a standard newspaper composing room cost system which would enable any composing room executive to know his costs. Such a system could be computed on a percentage basis for comparative purposes to compensate for the varying wage scales in other localities. Leon A. Link, composing room superintendent of the Des Moines *Register and Tribune*, while discussing composing room economies at the Pittsburgh A. N. P. A. mechanical conference, urged the establishment of a standard newspaper composing room cost system and expressed the wish that the Mechanical Department might adopt such a system. Mr. Link has used a cost system for the past two years which greatly assists him in administering affairs in the composing room of which he has charge.

At the 1932 convention of the Iowa Daily Newspaper Composing Room Executives a committee consisting of Leon A. Link *(Register and Tribune)*, chairman, Tom Bleurer (Davenport *Democrat)* and Paul Kamler (Clinton *Herald)*, was appointed to bring in a recommendation at the 1933 meeting for a newspaper composing room cost system which could be recommended for use in all the composing rooms of the Iowa members.

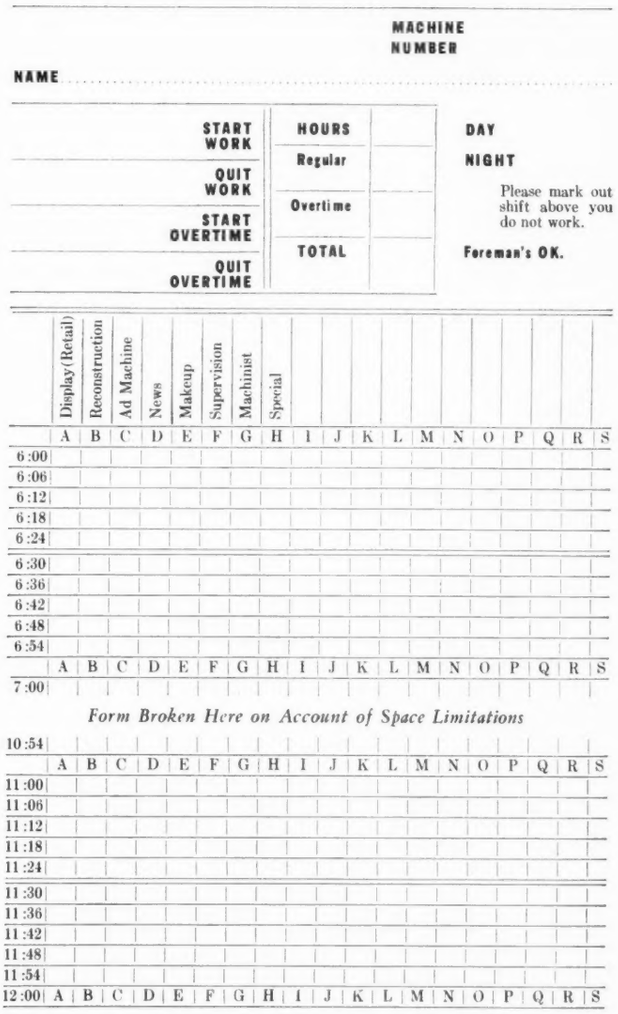


Fig. 1.—This is Form A and represents a facsimile of the daily time card which is given to each composing room employe when he starts work for the day under the proposed Iowa Newspaper Composing Room Cost System. The original card measures approximately 4½ in. by 11 in. The card is divided into spaces of one hour each and the reverse side of the card carries hourly spaces also in order to complete a 12-hour cycle. Each hour is divided into 10 units of 6 minutes each. Blank spaces from "I" to "S" are provided for the use of composing rooms requiring special classifications not appearing on this card, such as classified or syndicate work, or for work which should not be charged directly to the daily newspaper, such as circulation, promotion or commercial composition and makeup.

The committee, in considering a plan, kept in mind two definite qualities which should be embodied:

1. That the system must be simple so as to be easily understood and the cost of operation must be low.

2. That it must include the information necessary in order to be of value and afford opportunities for comparisons.

EXPLANATION OF SYSTEM

After considerable study, it was determined by the committee that the system used in the plant of the Iowa *Register and Tribune* could be employed as a model, excepting that a number of classifications should be eliminated to make the system flexible enough for use in plants of all sizes. Main classifications as shown in Fig. 1 were retained as follows: Display (retail), reconstruction, ad machine, news, makeup, supervision, machinist and special. Additional classifications may be added by any composing room superintendent desiring to do so under eleven spaces provided. These spaces are designated by the key letters or symbols from "I" to "S" respectively.

In the employment of a cost-finding system such as this it would be essential to engage the services of a composing room clerk or auditor to compile the daily report. It is estimated that for an average size newspaper approximately an hour and a half to two hours per day would be required to do this work. The clerk or auditor could also be engaged to perform other routine clerical duties in the composing room when not engaged in compiling cost system data.

TIME OR UNIT CARD

In making its report, the committee recommended the time card shown in Fig. 1, together with the explanation that the reverse side of the card contains a continuation of the table printed on the front side. In other words, the card spreads over 12 hours, 6 hours on the front for a. m. and 6 hours on the back for p. m. The heading, however, is printed on the front side of the card only. The employe writes his name on the card each day, when he starts work, when he quits work and with total hours of regular or straight time posted in the columns provided. The classifications of work, eight in all, are listed at the top of the card. Blank spaces have been provided for additional classifications if it is desired to include them. The employe draws a line at the time he starts a certain job down to the time he finishes under the proper classification. The card is divided into 6-minute units or 10 units to each hour so when he completes a day of 8 hours, exactly 80 units should be accounted for.

COLLECTING THE UNIT DATA

Form B, shown in Fig. 2, is used for taking the time from the card shown in Fig. 1. Across the top of this form are the same letters which appear on the unit or time card in Fig. 1. In using the blank shown in Fig. 2, opposite the number 1, for instance and under the proper letter, the number of units (not minutes) appearing under the same letter on the time card should be listed. At the extreme right-hand end of the line is a blank column for use in proving the time for each card, or, in other words, the different number of units across the sheet are added and if the total is 80 for 8 hours, all time has been accounted for. This same procedure is

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3																		
4																		
5																		
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Fig. 2.—Form B which is used by the composing room clerk or auditor for taking the time from the unit cards (Form A shown in Fig. 1) after all employes' cards have been turned in for the day. The first column represents the individual cards. The various kinds or classifications of work are transferred to the columns designated by the key letter, A, B, C, etc. The vertical column A, for instance, would represent the total hours for the day devoted to retail display by all employes who did any work in this classification. Any horizontal total opposite any numeral represents the amount of time in all classifications any employe worked for the day, the original form, of which this is a facsimile, measures 12 in. by 9 in. deep.

followed for each card. After the time has been transferred from the card to the Form B shown in Fig. 2, each column is added. For instance, under column A there is a total of 468 units; that multiplied by 6 (because there are 6 minutes in each unit) and the total divided by 60 (because there are 60 minutes in each hour) gives the hours and tenths of hours of work devoted to each classification. A simpler way to do this would be to write the 468 hours like this: 46.8, which is the same thing as the multiplication and division as above explained.

FINAL ANALYSIS BLANK

After the amount of time devoted to the different classifications of work in hours and tenths of hours have been arrived at, the totals are transferred from Form B to the form marked C in Fig. 3.

Note that on Form C the same headings are again carried, accompanied by the same letters of the alphabet as on the working card. In the first column opposite these heads in the heading "Newspaper;" under this heading enter the total in hours for classifications A, B, C, D, E, F, G, etc., which are all classifications of work devoted to the newspaper. Under the head "Extra" place the hours devoted to classification "H" or any other special classification which it may be desired to include, which is time devoted to work not entering into the getting out of the newspaper. The object is to separate time devoted to the newspaper from time devoted to commercial work. The total of the first col-

umn will give the amount of total time each day devoted to getting out the newspaper. Do no confuse extra time with overtime as that is not meant by extra time on this form in the second column.

On Form C, Fig. 3, provision for columns of ads set and columns of news set and the number of pages run

DAILY REPORT FOR .....

	Newspaper	Extra	
(A) Display (Retail)			Total Ad Time .....
(B) Reconstruction			Total News Time .....
(C) Ad Machine ...			Total Makeup Time .....
(D) News			Total Machinist Time.....
(E) Makeup			
(F) Supervision ...			Total.....
(G) Machinist			Extra Time .....
(H) Special			
.....			Total.....
.....			Col. Ads Set.....
.....			Col. News Set.....
.....			Pages.....
Total			

Ads.....Hours Per Column — Total Ad Time ..... — Total Ads Set .....
Total Reconstruction ... — Per Cent Total .....
News. .....Hours Per Column — Total News Time ..... — Total News Set .....

Fig. 3.—This is a facsimile of Form C. After the amount of time devoted to the different classifications of work as expressed in hours and tenths of hours has been arrived at on Form B (Fig. 2) the totals are transferred to Form C. The regular classifications used in the daily routine are placed opposite the proper letter symbol under the column heading, "Newspaper." Under the column heading, "Extra," place the hours devoted to any special classification which do not enter into the construction of the newspaper, such as commercial work. Do not confuse extra time with "overtime," since extra time in the second column does not mean "overtime." The totals may be determined at the end of each week in order to compile a weekly report. The original form measures approximately 8¼ in. wide by 6 in. deep.

has been made. The columns of ads set are arrived at by measuring duplicate proofs of all ads set on that particular shift or portions of ads reset. The total for columns of news set is arrived at by measuring duplicate proofs of news set on that shift regardless of whether the matter runs in the paper that day or at some future date. In other words, it is essential to know how much time it takes each day to produce what was actually produced that day. The sheet gives the daily report. At the end of each week the totals should be determined and a weekly report compiled, including these totals. These reports, properly filed, give the story of cost and production for each day and each week and provide an opportunity for comparison.

This system is built up on the basis of column cost and has nothing to do with page cost.

In using this system, the committee recommended that all plants use a 20-inch column as the basis for measuring columns in order to provide a standard of comparison.

Line Slug Metal for Flat Casts

Stereotype flat casts should be made preferably from line-casting machine metal rather than stereotype metal since hand-picking of cuts is eliminated in plants where type (slugs), strip material and cuts are cast from line-slug metal. This prevents the metals becoming mixed.

June Printing Patents

Printed copies of patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,908,703. LEAD AND SLUG CUTTER. John W. Flatt, Toledo, Ohio. Filed Nov. 9, 1931. Serial No. 573,750. 4 Claims. (Cl. 164 — 10.5.)

1. In a cutter, a bed for receiving the strip to be cut, a graduated bar secured to the bed and having teeth projecting from its front edge and spaced from the bed and with a straight edge beneath the teeth to receive the edge of the strip, a gage member selectively engageable with the teeth, a fixed cutting member, a cooperating movable cutting member having a depending lug, and means engageable with the lug to guide the movable cutting member as the cutting members engage each other.

1,908,921. FEEDING MACHINE FOR PRINTING PRESSES. Morris G. Rosenthal, Cleveland, Ohio. Filed Oct. 7, 1931. Serial No. 567,333. 8 Claims. (Cl. 101 — 287.)

1. In a feeding machine for printing presses, the combination of an endless sheet metal conveyor having apertures formed therein to permit the support and printing of sheets carried by the conveyor, lug stops beveled at one side and perpendicular on the other disposed at each side of the conveyor to permit the introduction of sheets and cause them to slide against the stops at one side, pairs of upwardly extending lug stops between the apertures the front faces of which are perpendicular to the conveyor and the backs of which are inclined, whereby a sheet dropped between the stops will go against the vertical faces of its stops and be accurately located against the side stops, slots for the engagement of a feeding means at one side of the conveyor, drums for the endless conveyor, a plurality of printing presses through which the conveyor is disposed adapted to print sheets carried thereby, the presses being disposed to print the sheets one at a time successively in different colors, a drier embracing the upper run of the conveyor for drying the sheets after they have been printed, an intermittent feed means comprising a rotary pulley, an adjustable wrist pin thereon, a pawl pivoted to the wrist pin provided with a hook engaging portion, a slide adapted to reciprocate on the edge of the conveyor slotted to correspond with the slots in the conveyor, a depending slotted ear on the slide for guiding the pawl, a cross pin through the pawl extending into the slot, and a tension spring connected at one end to the slide and at the opposite end to the pawl to urge the same yieldingly into engagement with the conveyor, coacting to advance the conveyor intermittently step by step, and an independent motor connected to drive the conveyor to advance the printed sheets through the drier in the event that printing is interrupted.

1,909,282. METHOD OF PRODUCING DIAPOSITIVES IN THE PRODUCTION OF PRINTING FORMS. Rudolf Kirsch, Zofingen, Switzerland, assignor to The Firm Rinco A.-G., Zofingen, Switzerland. Filed Mar. 18, 1929, Serial No. 348,136, and in Switzerland Mar. 23, 1928. 9 Claims. (Cl. 95 — 5.)

1. The process of producing printing forms comprising assembling a non-translucid negative by placing light shade characters on a non-translucid dark background, arranging a non-translucid photographic negative on the background in a desired position, photographing a diapositive of the assembled negative and transferring the diapositive image to a printing form.

1,909,518. WEB-PERFECTING PRINTING MACHINE. John A. Boyce, Chicago, Ill.; John F. Thomas, administrator of said John A. Boyce, deceased. Filed June 20, 1929. Serial No. 372,245. 38 Claims. (Cl. 270 — 11.)

1. In a machine, the combination of main full speed perfecting, cutting, collecting, and folding devices, a half speed perfecting device and half speed supplement cutting and inserting device, built on a higher level than the main cutting device, and located between the main full speed webs or web members that run to the main cutting device, means on the full-speed cutting devices for making two one-page-long cuts for each revolution of the main full speed perfecting means, one of the cuts being slightly longer than the other cut, and means for collecting and folding the cuts.

1,910,359. PRINTING PRESS. Christian Paulsen, Clifton, N. J., assignor to New Era Manufacturing Company, Paterson, N. J., a Corporation of New Jersey. Filed Mar. 21, 1931. Serial No. 524,263. 22 Claims. (Cl. 101 — 227.)

1. In a web printing-press, a rotary printing couple, means for rotating the printing unit at a uniform speed, means for feeding the web at substantially the same speed through the printing couple, means for advancing the web at a slower speed, and means for retracting the web when the advancing means are in action.

1,910,506. METHOD OF AND MEANS FOR FEEDING SHEETS TO MACHINES. Georg Spiess, Leipzig, Germany. Filed Feb. 11, 1931, Serial No. 515,060, and in Germany Feb. 21, 1930. 14 Claims. (Cl. 271 — 27.)

1. A device for feeding sheets individually one by one from a pile to a printing or like machine, comprising in combination: first feeding means for separating and feeding forward the topmost sheet; second feeding means for imparting to the sheet a lateral movement; third feeding means for imparting to the sheet a forward movement; and means for adjusting at will the relative speeds of the feeding means, substantially as described.

1,910,524. TYPE SLUG TRIMMING DEVICE. Charles W. Curle, San Francisco, Calif. Filed May 12 1930. Serial No. 451,710. 7 Claims. (Cl. 90 — 16.)

2. A slug trimming mechanism comprising a pair of depressed low slugging cutters, a trip mechanism associated with each of the cutters whereby when a slug is moved therebeneath, the cutters will be elevated after a pre-determined movement of the slugs therebeneath, a pair of end cutters, gauges positioned adjacent each of the end cutters and means adapted to carry a slug past the gauges and the end cutters, whereby the ends of the slugs will be cut parallel.

1,910,535. TYPOGRAPHICAL COMPOSING MACHINE. Chauncey H. Griffith, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 2, 1930. Serial No. 485,856. 27 Claims. (Cl. 199 — 29.)

1. In a typographical composing machine, the combination of a magazine containing a series of two character matrices, a keyboard mechanism for effecting the release of the matrices therefrom, including a series of key levers, an assembler offset from the magazine and wherein the released matrices are composed in line, a traveling conveyor for receiving the released matrices from the magazine and delivering them to the assembler, a matrix level controlling device associated with the assembler and movable to operative and inoperative positions, and means controlled by the operation of the key levers for actuating the device, and comprising relatively movable members associated with the key levers and adapted to be selectively set by the matrix releasing operation of the key levers to predetermine the operative or inoperative position of the matrix level controlling device.

1,910,566. SLUG CASTING MACHINE. John R. Rogers, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Aug. 7, 1931. Serial No. 555,684. 32 Claims. (Cl. 199 — 47.)

1. In a slug casting machine, the combination of a fixed supporting frame, a slotted mold, a hand stick wherein matrices are composed in line, means for holding the stick yieldingly on the supporting frame in casting relation to the mold, and automatic means for moving the stick bodily with reference to the supporting frame to effect alinement of the matrix characters with the mold slot.

1,910,570. TYPOGRAPHICAL CASTING MACHINE. Anthony J. Stouges, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed May 21, 1931. Serial No. 538,910. 20 Claims. (Cl. 299 — 54.)

1. In a typographical casting machine, the combination of means for casting printing slugs of slightly greater than a given height, and automatic means for dressing the printing faces of the cast slugs to remove irregularities or high spots in the type characters and to reduce them to the given height.

LINOTYPE 1933 LINOTYPE

will go down in history as the year ALL composition went on the slug standard.

ALL-PURPOSE LINOTYPE

5 POINT TO 144 POINT ↑ UNIVERSAL ALIGNMENT

MERGENTHALER LINOTYPE COMPANY, BROOKLYN, NEW YORK

save white paper. To do this, they are figuring on more shrinkage in the dry mat. As we know, the average shrinkage today is ⅜ in. to ½ in.; now they are considering going to a full ⅝ in. and more shrinkage in order to run 67 in. newsprint. This I believe to be excessive shrinkage for any dry mat. It is bound to cause considerable trouble in the general handling and operation of the stereotype department. I believe it will also cause more imperfections in the face of the plate because the more moisture the more shrinkage, so more distortions are bound to occur in the mat which naturally will be transferred to the plate.

I believe there are different ways mechanically to do this job of newsprint saving than by dry mat shrinkage. Of course, the extreme would be to narrow the type column and then use a mat with less shrinkage. A consideration is national advertising linage, for the more shrinkage the less space will be charged for national ads that only pay for space printed. It is possible that the added saving of newsprint would be offset by the loss in national advertising revenue. It may also be possible that if this saving of newsprint is done mechanically and a mat is used with only a ¼ in. or ⅜ in. shrinkage in width that over a period of one year the national advertising linage revenue might show an increase.

This might be worth the while of the A. N. P. A. mechanical committee to investigate.

The survey shows a range in shrinkage qualities in dry mats from 1/3 in. to 7/16 in. and is as follows:

MOISTURE OR SHRINKAGE SPECIFICATIONS

Manufacturers	Number of Customers	Number of Requirements	Range of Moisture Percentage	Range of Shrinkage, Inches
1	5	4	.....	⅜ to ½ in.
2	87	17	10 to 15	⅛ to ¼ in.
3	47	19	8 to 18	⅛ to ½ in.
4	20	10	12 to 28	¼ to ½ in.
6	79	25	10 to 17	¼ to ½ in.
7	2	2	.....	.....
8	35	17	11 to 16	¼ to ½ in.

In the discussion following Manager Wines' report, Henry Zenke, mechanical superintendent of the *New Yorker Staats-Herold*, asserted that there was no excuse for such a wide variation in dry mats. Several other speakers agreed with him. G. A. Disher, representing the Southam Newspapers, suggested that if six or less standardized thicknesses could be adopted perhaps the mat manufacturers could reduce the cost of these by charging a premium to customers insisting on odd specifications.

Charles H. Ruth, superintendent of the Washington (D. C.) *Evening Star*, made a motion that the A. N. P. A. mechanical committee be instructed to appoint a committee

John W. Park, Production Manager, Chicago Tribune, *and Charles H. Ruth, Superintendent, Washington (D. C.)* Evening Star.

of stereotypers to ascertain if the membership would accept standardized specifications of dry mats in order to effect price economy. This was seconded by A. H. Burns of the *Herald-Tribune*. The motion carried unanimously.

Thursdays session was outstanding because of the discussion on color provoked by the talks of Carl W. Jones, publisher of the Minneapolis *Journal*, and V. Winfield Challenger, printing department manager of N. W. Ayer & Son, Philadelphia.

Mr. Jones criticized newspapers generally for misunderstanding and misusing color and for failure to overcome the difficulties accompanying color printing in newspapers. In his talk, however, he said that as soon as newspapers have solved the problem of applying black ink to newspapers, the job of applying colors would be simplified.

At this session, following the speakers address. Walter Ogden, pressroom superintendent of the Cleveland *Press*, and a member of the mechanical committee, punctuated the discussion by suggesting that the A. N. P. A. mechanical committee get together with the A. A. A. A. committee to determine if advertising copy could be made to conform to the limitations of present press equipment by standardizing on registration of copy sent to newspapers not equipped with color units so as to allow ⅛ in. variation in register requirements. Mr. Ogden had in mind high-speed presses which are not equipped for color, on which it is impossible to maintain exact register.

At this session Mr. Challenger gave in detail the technique of printing color advertising on newsprint and said that agencies would make generous use of color when printing technique has improved.

A. H. Burns, mechanical superintendent of the New York *Herald-Tribune*, criticized advertising agencies for showing flat-bed proofs to advertisers with the result that the advertiser expects the same brilliance in newspaper reproduction. Mr. Burns asserted that a rotary press cannot produce the brilliant color effects obtainable on a flat-bed press.

The important thing to be comprehended, as we see it, is that the advertiser and the publisher should understand the limitations of mechanical equipment at present in use. Likewise, the mechanical executive should appreciate the effect the advertiser is striving to attain. These two objectives were pretty well covered at the conference.

FLYING PASTERS

An unusual feature of the last session on Thursday consisted of illustrated descriptions of flying pasters told by the following representatives of the various manufacturers:

Geo. R. Heffner, Kohler Bros.
Harry V. Ball, Vice President, R. Hoe & Co.
Oscar Roesen, Vice President, Wood Newspaper Machinery Co.
Carl Drange, Chief Engineer, Walter Scott & Co.
A. H. Parks, Cline Electric Mfg. Co.

Great interest was shown by the mechanical executives in this new feature of the program. E. J. Duffy, mechanical superintendent of the New York *Daily News*, suggested that representatives from manufacturers be asked to discuss printing metal alloys on next year's program.

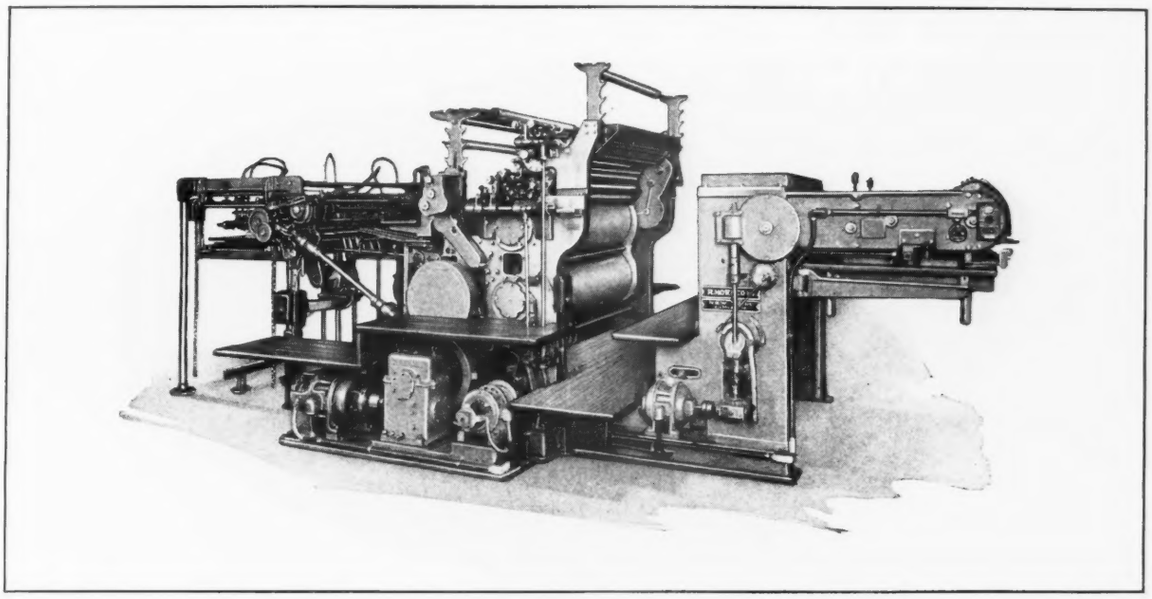
Importance of Rollers for Offset Lithography

(Continued from page 10)

cases roll on the plate cylinder, or they may contact the bevel of the cylinder. When this happens it is impossible for dampeners to be set with proper tension on the plate. Also it may cause a light scum over the plate on each job. Always see that the ends fit snugly against the outside core of the roller. The better way is to use heavy lithograph flannels, instead of a quantity of thin covers, as only two or three will be needed.

The molleton should be selected for weave and weight. A medium weight molleton with an even nap and a fairly close weave is the best. In a loosely woven molleton the nap will pull off, get into the inked section of the plate, causing all sorts of streaks and marks in the finished presswork. We recommend a good medium weight molleton as giving the most satisfactory service. Dampener rollers should be kept to the finished diameter size the press manufacturer specifies.

The World's Finest Offset Press



ASSURES MAXIMUM PRODUCTION

of the finest quality

WHETHER it be for single color or multi-color work, it pays to use Hoe Super-Offset Presses. They incorporate all of the features that make for quality printing at low cost.

These presses are so designed and constructed as to assure accurate register at high speeds. They possess unequalled flexibility and control of ink and water distribution. Lasting rigidity and permanent alignment of every part is made positive.

Users find that the many exclusive features of these Hoe Presses truly make them "the world's finest offset presses." We will gladly send you descriptive literature, or if you prefer, drop us a line and a representative will call to give you his personal attention.

IRVING TRUST COMPANY . . . RECEIVER IN EQUITY FOR

R. HOE & Co., Inc.

• General Offices •

138th St. and East River

• New York City •

BOSTON SAN FRANCISCO CHICAGO

Latest Printing Equipment Mechanisms

(Continued from page 12)

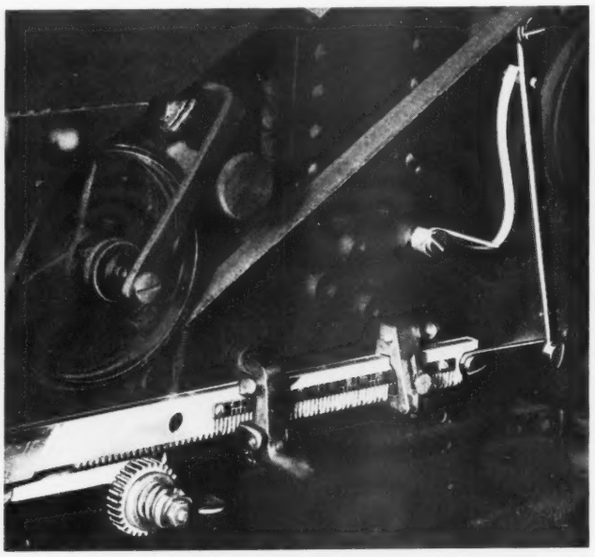
adjustments. All vital running parts of the press are equipped with anti-friction radial or thrust bearings which require lubrication only at infrequent periods.

Harris Assembler Slide Control

A new type assembler slide control for application to linotype machines is being made by R-H-M Appliance & Supply Co., 52 Hancock West, Detroit, Mich.

The Harris Assembler Control consists of a small pinion frictionally mounted upon a lever extending underneath the assembler chute block. The pinion teeth are engaged by the teeth in a rack on the underside of the assembler slide bar. The pinion is held upwardly in engagement with the bar teeth by a coil spring as shown in the illustration. The bar moves to the left in the customary manner as each matrix or spaceband enters the assembling elevator. The pinion prevents the slide bar moving to the left more than the thickness of the matrix body through an adjustable spring tension which operates to control any overthrow movement of the pinion or slide. When the assembling elevator is raised by the operator to lift the completed matrix line to the delivery slide, the lever supporting the pinion lowers the pinion out of engagement with the rack and the slide bar is free to return to normal position. When the assembling elevator reaches normal position the pinion again engages the teeth in the slide bar. The operator may, at any time, depress the pinion by means of an extension provided for the purpose, after lifting out one or more matrices, to permit the slide to retract the partially assembled matrix line against the star wheel.

A novel feature of the assembler slide mechanism is the floating return spring which is made from flat stock suitably bowed to shape. It is claimed for this spring that when the operator is composing a line of matrices of wide measure that its tension is less at 24 or 30 ems than it would be if a 12 or 13-em measure were being set, and that, as a result of the



lessened spring resistance, the operator is able to set the maximum amount of type free from transpositions.

Part of the Harris Assembler Control consists of a block which is fastened to the lower end of the assembling elevator right-hand gib in order to provide an adjustable means of regulating the normal operating position of the elevator.

One Good Roller on Hand Is Worth Three on the Way

Good rollers mean just one thing—good ink distribution. Without a satisfactory distribution of ink the effort, expense and equipment necessary for good presswork are wasted. When so much depends on the final operation, why take chances with inferior or worn out rollers? Good rollers are not made in a day. They require a certain amount of time for their manufacture, and this should be allowed for in ordering.

We manufacture the following rollers:

Star Rubber Rollers
Duplex Composition Rollers
Fibrous Composition Rollers
Leather Rollers
Plush Rollers
Molleton Rollers
Moleskin Rollers

Also the Star line of adhesives, which includes rosin cements, splicing and makeready pastes, mounting, labelling, wrapping and case sealing glues. Samples will be sent on request without obligation.

BINGHAM BROTHERS COMPANY

(FOUNDED 1849)

ROLLER MAKERS

ROLLERS OF

RUBBER, NON-MELTABLE AND SEASONAL COMPOSITION, LEATHER, MOLLETON, MOLESKIN PLUSH.

ALSO STAR PASTES, GUMS, GLUES AND ADHESIVES

N.A.P.R.M.

MACHINE-CAST PRINTERS' ROLLERS · BKO · ESTABLISHED 1849 ·

PHILADELPHIA
521 CHERRY STREET

NEW YORK
406 PEARL STREET

BALTIMORE
131 COLVIN STREET

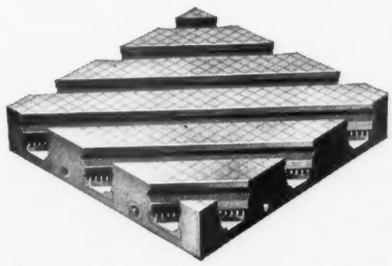
ROCHESTER
980 HUDSON AVENUE

Order From Nearest Plant

The Service is Uniform

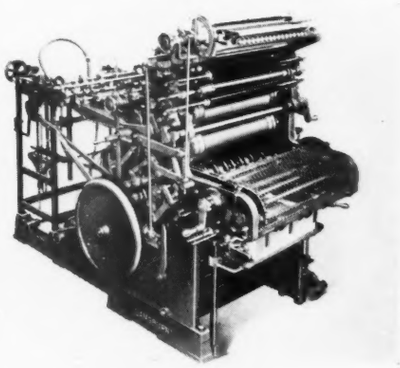
Warnock Malleable Iron Diagonal Block

The Warnock Diagonal Block manufactured by the Printing Machinery Company, 436 Commercial Square, Cincinnati, Ohio, will hereafter be obtainable in Malleable Iron according to an announcement just received. President Simpson states that the Warnock Malleable Iron Block will be made in the 4 in. by 4 in. section, the same as the Aluminum Alloy Base. This 4 in. square section, it is claimed, gives the printer flexibility and enables him to make up a large variety of base forms. The Warnock Malleable Diagonal Block is made with heavy lips for holding in the hooks, and in the Warnock Malleable Iron Block the corners are substantial and durable. It is possible to wash Malleable Iron Base Forms with all types of ink solvent without injury to the base. Besides this improvement in the block itself, it is stated, that the hook used with this base has been improved. The internal parts of the Warnock Diagonal Hook are made from modern alloy steels, correctly heat treated in an electrically-controlled furnace. Users of the Warnock System can adopt present hooks and accessories for use in the Warnock Malleable Iron Block.



Langburn 14x19 Offset Press

The design of the Langburn 14 in. x 19 in. offset press, manufactured by the Cochrane-Bly Co., St. James St., Rochester, New York, it is claimed, provides for a rigid and compact machine, free from vibration. The side frames are mounted and connected by a heavy base extending the full width of the machine. To this base is fastened the extension base on which the feeder is mounted, and on the base between the frames is the motor and drive mechanism. All operating cams are arranged to operate from a separate cam shaft.



The ink motion has 18 rollers including steel, ductors, distributors, oscillating riders, and has 3 form rollers in contact with the plate. All rollers are easily adjusted and removed. A wash-up device can be quickly attached, and the entire ink motion cleaned in a few moments. Murcury rollers are standard equipment, and are all interchangeable with form rollers.

The water motion has two dampener rollers in contact with the plate. A ductor and two brass rollers with sensitive control and ratchet adjustment together with oscillating movement complete this unit. Cores for all dampener rollers are made from stainless steel on which is vulcanized a special rubber composition. This in turn is covered with one thickness of flannel, and one thickness of molleton.

The cylinders are 7 in. diam. x 24¾ in. long including the bearers. The channels are 120 deg. Both the plate and blanket cylinders are positive, quick means for changing and hold-

BURGESS CHROME MATS

The Men Behind The Man

YOU MEN in the stereotype rooms don't know us personally. But in four short years, hundreds of you have become intimately acquainted with the Burgess Chrome Mats which we worked out first in our laboratory.

We are the men behind the Burgess Man who calls on you.

Just as you try to get more good printing out of dry mats --- so we try to put more good printing into dry mats.

We are your partners. We're both aiming for better printing.

Whether you use Burgess Chrome Mats or not---don't hesitate to tell us your "grief". It's our business to help lick trouble.

•

THE CHROME FORMULA

The Chrome Mat Formula gives Burgess Chrome Mats their superior printing characteristics—makes them easier to handle — reduces troubles —cuts costs.

•

BURGESS CELLULOSE COMPANY
FREEPORT, ILLINOIS

CHROME MATS

A Laboratory Product

BURGESS CHROME MATS

BURGESS CHROME MATS

BURGESS CHROME MATS

Why It Pays to Imperialize Your Plant

ANYONE who has kept in close touch with the type metal field in the past 20 years can answer the question, "Why it pays to Imperialize your plant."

Imperial has written the history of advancement of type metal in the past two decades. Those who know will tell you we first dispelled the mystery from around type metal by publishing the book "Type Metal Explained." Our chemists and metallurgists originated periodical metal analysis. The Dross Drum and the famous Plus Plan were conceived by Imperial. Another book, "Type Metal Alloys," carried the explanation of metal even further. Recently Imperial has added Monotype Vitalloy to its list of achievements.

Summing up all the above, the plant that is Imperialized not only gets the benefits arising from all of these achievements but of any new features as they are brought out. This is why it pays to Imperialize your plant and

stick to

Imperial METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

ing plates and blanket, and a double adjusting worm to tighten both edges of the plates to the cylinder.

An automatic tester controls the blanket cylinder position, and throws out the cylinder when paper is not feeding while the press is running. A fine screw adjustment with index plate reading is used for setting the impression cylinder for various kinds of paper up to 0.015 in. thick.

The feed table has automatic front and side guides which place the paper in position to be picked up by the swinging grippers.

These gripper shafts are held stationary while the grippers secure hold of the sheets. A slow movement to the grippers is then imparted, gradually accelerating so that the sheet is traveling at the same speed as the cylinder when caught by the cylinder grippers.

The automatic pile delivery is equipped with 3 sets of delivery grippers which carry the sheets back, and deposit them on the delivery board where rear and side joggers keep the sheets in a perfect pile. The platform is equipped with casters. As the platform becomes loaded and reaches its lowest point, an automatic stop shuts off the delivery feed, also the feeder at the front of the press. The platform with its load of paper can then be moved out on its own casters. The capacity of this delivery is about 7000 sheets of average stock. A fine ratchet adjustment regulates the pile movement.

The feeder mounted, on the machine sub base, is a special suction type with oscillating movement.

The machine is driven through double texrope belts from a 1½ h.p. motor, slip-ring type, for speed variations, if A. C. current is used, and if D. C. motor is used, speed changes are made through a rheostat. The motor for the feeder air pump is ½ h.p.

The entire operation and control of the Langburn is from the delivery end of the press. A counter is provided which operates only as a sheet is delivered.

Size of largest sheet is 15 in. x 20 in.; printing surface is 14½ in. x 19½ in.; plate, 17⅞ in. x 19¾ in. x not more than 0.010 in. thickness; blanket, 17⅞in. x 19½ in. x not more than 0.067 in. thickness; height of press, 63 in.; width, over-all, 53½ in.; length 44 in.; length with feeder 87 in.; weight with feeder, about 4100 lbs.; speed, up to 5000 per hr.

Hand Engraved Rubber Plates

The practicability of rubber plate printing, it is claimed by the Vulcan Proofing Co., Brooklyn, N. Y., has been greatly enhanced by the introduction of Vulcolastic engravers' rubber for hand-cut plates. This rubber, impervious to oils and driers, is capable of consistently standing up for exceptionally long runs. Vulcolastic can be washed with kerosene, gasoline, benzine or other commercial washes usually found in pressrooms with no detrimental effect. The surface texture is especially fine and the material does not pit.

Many kinds of car cards, display cards, greeting cards and posters are now being printed from Vulcolastic plates. Further information may be obtained from the Vulcan Proofing Co.

Press Builders Organize

It is announced that The Newspaper Printing Press Builders' Association was formed on June 1, 1933, in conformity with the provisions of the National Industrial Recovery Act.

It is composed of all American builders of newspaper printing presses, comprising The Duplex Printing Press Compan, The Goss Printing Press Company, Irving Trust Company, Receiver in Equity for R. Hoe & Co., Inc., Walter Scott & Company, Wood Newspaper Machinery Corporation.

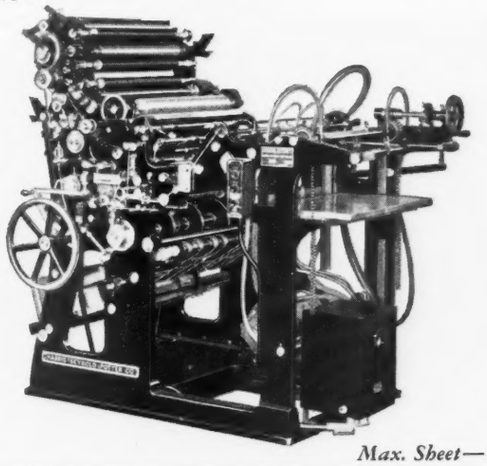
Henry A. Wise Wood was chosen Chairman, and Carl E. Drange, Secretary.

THE HARRIS OFFSET GROUP

for the

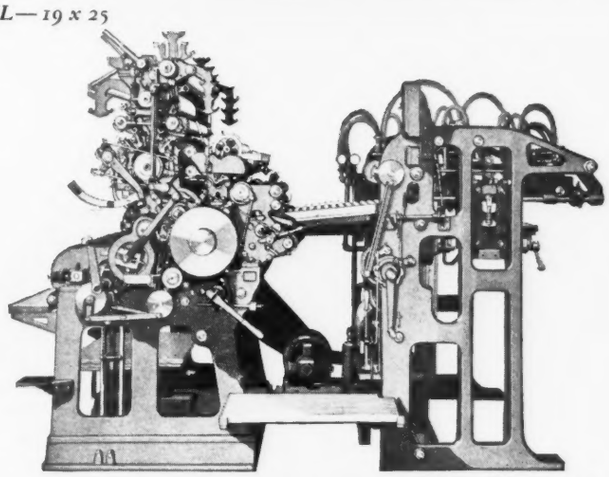
COMMERCIAL PRINTER

LSB—14½ x 22



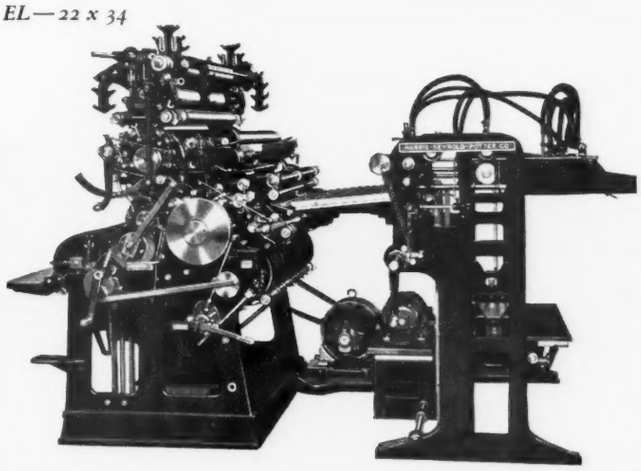
Max. Sheet—17 x 22

CL—19 x 25



Max. Sheet—21 x 26

EL—22 x 34



Max. Sheet—23 x 36

HARRIS built and Harris serviced . . . fast, modern production presses adapted to profitably handle both long and short runs. High speed, all purpose machines for fine commercial work and color production. • This is the Harris-Seybold-Potter Press Group . . . three of fourteen new model presses designed and marketed within four years in the campaign against press obsolescence.

Have you received your copy of "Commercial Printing by Offset" and "Planography" . . . Facts for the printer on this reproduction process?

HARRIS · SEYBOLD · POTTER

General Offices: Cleveland, Station D

Sales Offices: New York, 461 Eighth Avenue • Chicago, 343 South Dearborn Street • Dayton, 813 Washington Street

Factories: Cleveland and Dayton

Cumulative Experience

Every one of the eleven papers of the Lee Syndicate now depend on the Ludlow for their display composition. Within the last month the Wisconsin State Journal of Madison, Wisconsin, put in two Ludlows and an extensive matrix equipment, making unanimous the endorsement of the Ludlow system by the newspapers of the Syndicate.

In 1928, three of the Lee newspapers had learned the economy and effectiveness of the Ludlow. By 1930, more than half the papers n the chain had availed themselves of the benefits of all-slug composition. Now there are eleven which appreciate Ludlow simplicity of mechanism and operation.

This record provides convincing testimony indeed.

Ludlow Typograph Company

2032 Clybourn Avenue

CHICAGO

SET IN LUDLOW KARNAK MEDIUM AND LIGHT

Iowa Executives Meet

Leo J. Carle, Superintendent, Mason City (Iowa) "Globe-Gazette," Who Was Elected President of the Iowa Newspaper Composing Room Executives at the June Meeting Held in Mason City, Iowa.

The seventh annual conference of the Iowa Daily Newspaper Composing Room Executives was held in Mason City, Ia., on June 12-13. The highlight of the conference was the adoption of a standard composing room cost-finding system which is applicable to any member newspaper in Iowa. It is reported that several Iowa papers are using the system and many more will install it immediately. It is expected that some interesting data will be presented at next year's meeting which will be held in Clinton during the month of June.

Leo J. Carle, Mason City *Globe-Gazette,* was elected president; Ed Funk, Waterloo *Courier,* vice president, and Paul Kamler, Clinton *Herald,* secretary-treasurer.

Goss Announces New Designs

The Goss Printing Press Company, Chicago, Ill., according to R. C. Corlett, Secretary and Sales Director, is announcing new designs in printing equipment covering the entire field of publishers' requirements and reaching an entirely new field with the small Goss Combination Press—a roll-fed perfecting press of unusual flexibility and range in page capacity. This machine is developed along an entirely new principle—that of pre-printing and rewinding the web for large size newspapers, thereby meeting the requirement of the average weekly newspaper throughout the country as well as the smaller daily.

Illustrating somewhat the flexibility of this machine, it will print a four-page newspaper of 6, 7 or 8-column size delivered flat or folded to one-half or quarter-page size and with rewind device will deliver a 4, 6, 8, 10 or 12-page newspaper all from roll paper stock. An unusual feature of this machine is that with the folder feed board attachment, an insert of two or four-page supplements can be added to any of the above products and delivered from the press in one section, giving maximum capacity of sixteen pages. The fact that single-page hand bills can be printed in two colors at one time or one double-spread in two colors or black, folded half or quarter-page folds, make this press interesting to the combination newspaper and job shop.

The new Goss Combination Press will be on exhibition at the World's Fair Century of Progress Exhibition in Chicago, Paul F. Cox, inventor of the press, is demonstrating it in the General Exhibit Building Unit No. 2.

Coincident with the above announcement is that of the new Goss High Speed Anti-Friction Press, now erected and demonstrated in the Chicago factory. This press also has many new features. This unit, according to the Goss Company, is guaranteed at speeds of 50,000 to 60,000 newspapers per hour. Every moving part is entirely enclosed and as it is a ball and roller-bearing press throughout it operates smooth-

ly and silently. The solid steel cylinders weighing approximately 4800 lbs. each, revolve at tremendous speeds while the clash of gears in entirely eliminated due to the helical tooth design and the fact that all of these gears as well as levers are completely enclosed in oil type housings fed from a pressure lubricating system.

Through the period of the depression, an official states, the Goss organization has put particular emphasis on its Research and Engineering Departments.

New Catalog for Offset Equipment

The Lanston Monotype Machine Company announces it will very shortly issue a catalog in which Monotype Photo Mechanical Equipments for Offset and Gravure Printing will be illustrated and described. The catalog will be printed by the offset process and no effort is being spared to make it a noteworthy example of the highest quality of offset work. In addition to a description of the various Monotype platemaking equipments listed, the catalog will explain the function of each in detail, and will contain much interesting and valuable comment on various phases of offset and gravure work. Readers of PRINTING EQUIPMENT ENGINEER may each obtain a copy of this catalog of Monotype Photo Mechanical Equipments by addressing a request to the main office of the Monotype Company at 24th at Locust Streets, Philadelphia.

Rinne Now Mechanical Adviser to Booth Newspapers

Clarence H. Rinne

Clarence H. Rinne, who has been associated with the Lanston Monotype Machine Company for the past five years, has resigned his position with that company to enter the employ of the Booth Newspapers, Inc., operating daily newspapers in Grand Rapids, Flint, Kalamazoo, Jackson, Muskegon, Ann Arbor, Saginaw and Bay City, all in the state of Michigan. In his new position Mr. Rinne will serve in the capacity of Mechanical Adviser and take charge of production in the mechanical departments of the Booth newspapers. Mr. Rinne's earlier connections were in the mechanical departments of commercial plants and newspapers in Minneapolis, Milwaukee and other mid-western cities.

Subsequent to 1928 and because of his intimate knowledge of newspaper composing room practice, Mr. Rinne was appointed special newspaper representative in Monotype's western district. During the past few years he has made a special study of the application of time-keeping systems to newspaper production, also standardization of methods employed in newspaper mechanical departments.

It was while doing special work for the Monotype Company in the composing rooms of several of the Booth newspapers that Mr. Rinne attracted the attention of the Booth officials with the result that he was engaged permanently to assist in the standardization of composing room methods and to install in each Booth plant a suitable time-keeping system. He took over his new duties on May 1.

The Dependable Certified

No. 5 of a Series of Whys and Wherefores of Certified Dry Mats

Time is the most precious element in newspaper manufacture. Every second of every minute counts in getting an edition to press.

A minute's delay in getting to press may be the difference between putting over a scoop or being scooped. With Certified Dry Mats on the job mechanical staffs are assured of getting their papers on the street on schedule time, and when necessary ahead of time. Starters in 3 to 5 minutes typifies Certified performance in many a plant.

The business offices and mechanical staffs are taking the fullest advantage of every minute saved by Certified Dry Mat cold stereotyping by keeping their forms open so much longer and thereby publishing later news. In hundreds of newspaper offices in the United States and Canada they are depending upon Certified Dry Mats because they know that their editions will be gotten out on time and their papers will be well printed. And there is no substitute for cleanly and clearly printed papers.

This is your invitation to get acquainted with Certified Dry Mats by trying them in your own plant, under your own working conditions. You will then appreciate why Certifieds are welcome to mechanical staffs and why "Certified" on a dry mat has become synonymous with "satisfied" to so many of them.

The use of Certifieds helps create and maintain harmony and cooperation between composing room, stereotype foundry and pressroom, and in that way is a boon to them all.

Samples for a demonstration will be sent free of charge and without obligating you in any way.

We are gladly at your service.

Certified Dry Mat Corporation,
342 Madison Ave.
New York, N. Y.

(Date) _____

Gentlemen:

You may enter our order for prompt shipment of _____ case(s) of Certified Dry Mats as checked below:

☐ Check 15c Ace mats f.o.b. West Groton, Mass.

☐ Check 12c Certifieds f.o.b. West Groton, Mass.
(Cases contain 500 mats, 20" x 24")

▼ ▼ ▼

Please send samples of ☐ 15c Ace Mats ☐ 12c Certifieds free of charge and without obligation.

Please be sure to check specifications.

THICKNESS
☐ .024/5"
☐ .027/8"
☐ .031/2"
☐ .035/6"

SHRINKAGE
(Mill Moistened)
☐ 1/4"
☐ 3/8"
☐ 1/2"
☐ Unconditioned Special Size

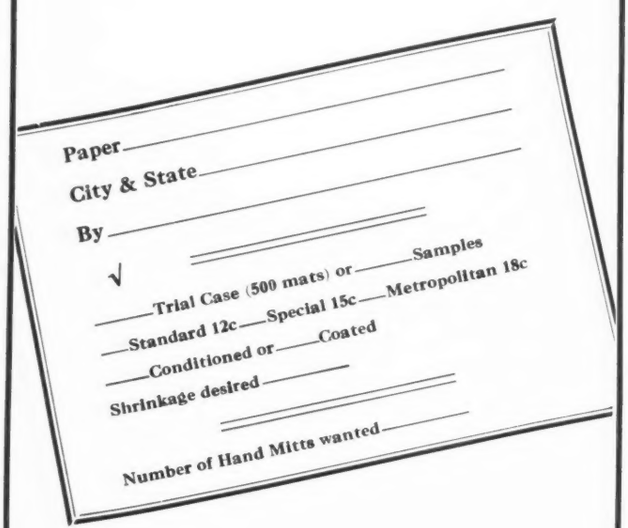
Name _____ Address _____

By _____ Title _____

Daily Times, Chicago, Took Time for Test

IN December, 1929, *The Daily Times* ordered a trial shipment of Wood Dry Mats. On the strength of performance which met the exacting requirements of the "Illustrated," this paper said, "O. K." Since March, 1930, Wood Dry Mats have been "standard equipment" with *The Daily Times*.

Here's the coupon for your trial lot. Order at once and include your request for Wood Hand Mitts for the men—free.



WOOD DRY MATS
ALWAYS UNIFORM

WOOD
FLONG CORPORATION
HOOSICK FALLS, N.Y.

Economies of Rubber Roller Upkeep

(Continued from page 13)

The roller grinding, however, is the big job facing those responsible for mechanical operations. In the past the subject has been wrapped in mystery. The job, however, is not one that requires exceptional genius but one which can be handled by any good mechanic available from within the ranks of the pressroom staff.

SELECTING THE EQUIPMENT

In the selecting of equipment for any particular shop it is possible to obtain a lathe in a size exactly adapted to that shop. For example a large newspaper plant using long rollers can obtain a lathe with a long bed. This same lathe, of course, can be used for handling short rollers. On the other hand the plant using only short rollers among its equipment as do some commercial plants can obtain a lathe with a short bed length, thereby saving considerable in the original cost of the equipment.

Thompson with Morrill

Arthur S. Thompson, who until recently has been manager of the L. Martin Ink Co., is now associated with the Geo. H. Morrill Co., Division of General Printing Ink Corporation, 100 Sixth Ave., New York, New York.

Mr. Thompson was secretary of the Board of the Associated Press for 13 years when he resigned in 1927 to take charge of the ink department of the L. Martin Co., a subsidiary of the Columbian Carbon Co., which started in business at that time.

Mr. Thompson feels that his new connection will enable him to serve well his many friends in the printing industry.

Richards with Claybourn Corporation

L. W. Claybourn, President of Claybourn Corporation, announces that E. R. Richards of Chicago has joined the Claybourn organization, and states also that the Claybourn Corporation has been operating at practically full capacity during the depression period. Mr. Richards has made a thorough study of rotary and multi-color printing from every angle and the Claybourn Corporation feels that he will prove of great value, both to the Company and the trade as a whole as he will be able to work out the problem of getting greater production at lower cost. Mr. Richards' headquarters will be in Chicago.

MEETS A NEED AMONG MECHANICAL EXECUTIVES

Printing Equipment Engineer,
1370 Ontario Street,
Cleveland, Ohio.

Gentlemen: I desire to take this opportunity to express to you my regard for your publication. I feel that it is meeting a need among mechanical executives in the printing world, and you have my every good wish for a continued growth.

Yours very truly,
G. W. HOLLOWAY,
The Nashville Banner,
Supt. of Composing Room.

New Intertype Spacebands

By H. R. FREUND*

THE new spaceband introduced by Intertype Corporation has been improved in design and possesses a high degree of accuracy and strength. The principal difference in the new spaceband and the old is in the long or wedged part of the spaceband. This wedge has been greatly strengthened by making the slot narrower, thereby increasing the cross-sectional area of the wedge ribs 16%.

In addition to securing greater strength, a special effort was made to produce a spaceband which could be depended upon for accuracy. It is a well-known fact that parallelism of the two members of the spaceband is absolutely essential at any of

their relative positions during justification to prevent that much-dreaded condition of hot type metal entering between spacebands and adjacent matrices.

It is also necessary to maintain extreme accuracy across the body dimension of the spacebands as otherwise objectionable metal dust accumulations may result on the front edge of the molds.

The different parts of this spaceband are entirely interchangeable and spare slides may be kept on hand for emergency purposes.

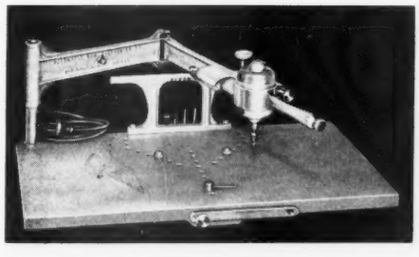
To assure unquestionable precision in the manufacture of this new spaceband entirely new tools and up-to-date machinery have been installed.

The most recent addition of Intertype's variety of sizes is the design now known to the trade as the Ideal spaceband. This new style was designed to minimize hand spacing, which in some classes of composition runs from 40% to 80%. This spaceband is 0.0005 in. thinner than the conventional thick band when the band is fully extended in the assembling elevator, but when the band is in its highest position, its total expansion is approximately 21% more than that of the regular thick band. The extra expansion gained by this improvement is actually one and one-half points to each band which is the equivalent of nearly a thin space.

The average line of news composition contains five spacebands, and the combined thickness (at the bottom) of five Ideal Spacebands is seven and one-half points more than that of five thick bands.

*Chief Engineer, Intertype Corporation, Brooklyn, New York.

Dixon Router and Type-High Planer



The Dixon Router and Type-High Planer, made by the Automatic Saw Sharpening Co., 312 East Ohio St., Indianapolis, Ind., routs stereo casts, electros, copper, zinc, line-casting machine slugs, wood, rubber and linoelum.

The ball-bearing fan-cooled motor operates at 20,000 r.p.m. is raised and lowered by hand wheel. The arm may be raised and lowered by mean of a foot stirrup. The nickel-plated bronze arm supports a switch to control light and motor.

The bed is 25 in. by 15 in. and has a machined surface. The workholder locks any size or shape cut.

Registering Color Forms
in
Original Make-Up

is one of the great time-saving services of the Hacker Make-Up Gauge.

The key form, already justified to lift, under lock-up pressure and in perfect alignment, is inked while still locked up and an impression taken on the transparency by rubbing with the hand or rolling with clean brayer.

Subsequent forms can be registered-in exactly by means of this registered proof thus saving an enormous amount of time on the press.

Send for catalog of this great labor-saving device, the Hacker Make-Up Gauge, to

HACKER MANUFACTURING CO.
320 SOUTH HONORE STREET CHICAGO

Do Your Second Elevator Bars Become "Nicked"?

Then Watch Your Spacebands!

The experience of one machinist we know of was illuminating in this respect.

He found that the rails of his Second Elevator Bars became "chattered" and could not assign a cause for this condition, which raised havoc with matrix combinations.

An experienced Linotype man (not connected with this company) suggested that the Spacebands in use might be at fault. He brought with him, the following day, a special gauge. It was ascertained that *thirteen out of every thirty bands* of two independent makes were narrow between the ears of the sleeves.

The same gauge was used by this machinist on a quantity of "STAR" Spacebands and passed this test 100%. Needless to say that machinist now uses these bands exclusively.

Protect yourself likewise, by standardizing on "STARS." You will find them consistently accurate *always*.

LINOTYPE PARTS CORPORATION

NEW YORK
203 Lafayette Street

KANSAS CITY
314 West 10th Street

Agencies:

CHICAGO
318 West Randolph Street

LOS ANGELES
1520 Georgia Avenue

Columbian Inks

For fine printing of

Newspapers
Magazines
Books
Box Board
Paper Bags
Cloth Bags

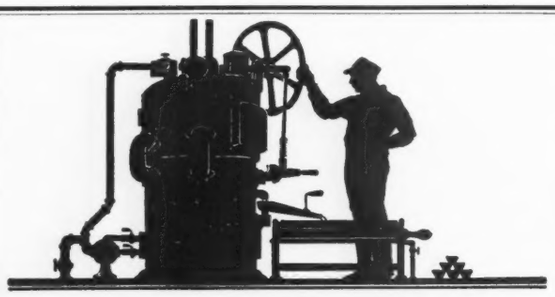
And other mediums

BLACKS AND COLORS

THE L. MARTIN COMPANY

Arthur S. Thompson, Manager

45 EAST 42ND STREET NEW YORK CITY



THE MONARCH MONOMETER

A

PRINTERS' MELTING FURNACE

WITH
THERMOSTATIC CONTROL
OF TEMPERATURE.
ELECTRICITY, GAS, OR OIL
AS FUEL.
AUTOMATIC MIXING AND
STIRRING OF METAL.
DROSSLESS & FUMELESS.
MADE IN CAPACITIES
FROM 500 - 10,000 LBS.

WRITE FOR COMPLETE CATALOG P.E.E.

The Monarch Engineering & Mfg. Co.

701 - 702 American Bldg., Baltimore, Md., U. S. A.
Works, Curtis Bay, Md.

Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

Cleer-Proof Liquid Ink—Four-page folder describing an ink expressly made for use on composing room proof presses.

Precision Lithographic Press Plates—Folder with inserts illustrating and describing Precision Hydraulic Rotary Litho Transfer Press equipped with motor and suitable controls.

Win with a Major Super-Speed Press—Illustrated folder 8½ in. by 11 in., 8 pages, showing possibilities and various mechanical features of 13 in. by 19 in. press.

Harris Assembler Control—Four-page, illustrated circular describing assembler slide for application to linotypes.

Motor Starting Switches—Folder, giving specifications of starting switches for fractional-horsepower motors. Illustrated.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.

Gentlemen: Please send the literature checked above without obligation.

Name of Company_____

Attention of_____

Position_____ Dept._____

Street Address_____

City_____ State_____

Correction

In the June ENGINEER, through a typographical error, it was made to appear that Vitalloy 160 showed a hardness equal to special monotype metal which contains 3% more tin and "39%" more antimony than Imperial's regular monotype metal. The content should have been stated as 3% (instead of 39%) more antimony than the regular monotype metal furnished by the Imperial Type Metal Co. The error appeared in an article entitled: "Casting Experience of Monotype Vitalloy 160."

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FORM-O-SCORCH

Unconditionally Guaranteed to Scorch Mats Uniformly Without Burning, Streaking, Warping or Buckling

The many exclusive features of the Form-O-Scorch for the production of perfect mats, together with its moderate first cost make it the outstanding value for this type of machine.

The self-conforming cover with adjustable tension enables the stereotyper to apply any desired pressure, which combined with the automatic timer produces all mats alike, perfectly formed and scorched.

Form-O-Scorch mats are very evenly surfaced, therefore produce even surfaced plates which permit easing-off on press impression and effect a great saving in wear on press blankets.

If you want perfect mats at least possible cost, now is the time to look into the question of Mat production in your plant and send for more complete details on the Form-O-Scorch.

Manufactured Only by

AMERICAN PUBLISHERS SUPPLY, West Lynn, Mass.

SOLD EXCLUSIVELY BY AUTHORIZED SALES AGENTS:

Burgess Cellulose Company, Freeport, Illinois.
Reed Roller & Supply Co., Inc., Seattle, Washington.
Mid-West Publishers Supply Co., 120 No. La Salle St., Chicago, Ill.
Wood Flong Corporation, Hoosick Falls, N. Y.
Certified Dry Mat Corporation, New York City
George Russell Reed, Jr., San Francisco, Cal.

There Has Been No Moratorium on Intertype Improvements

FOR the past three years Intertype engineers have been busily engaged in creating improvements that will help publishers and printers to meet today's new cost requirements and still show a profit.

It is no longer necessary to use two different machines to set two sizes of type. On the New Model F Mixer you may set 5 to 18 point from main magazines, from one standard 90-channel keyboard, at straight-matter speed.

It is no longer necessary to use two different machines to set display and text any more. The New Model G Intertype Combination 72-90 Channel Mixer sets display and text from the same keyboard. When there is not enough display to keep the machine busy it "fills-in" on regular small type. Therefore it is a real "busy-body" that keeps constantly adding to your profits.

It is no longer necessary to waste money setting white space by hand. The Intertype Universal Automatic Quadding and Centering Device makes all kinds of composition as fast and as easy as straight composition. And the New Intertype Ideal Spacebands increase output from 200 to 300 lines per machine per day.

So, if you want to meet the new cost requirements with a smile, investigate the Progressive Intertype.

INTERTYPE CORPORATION

Brooklyn, N. Y., 360 Furman St.; Chicago, 130 North Franklin St.; New Orleans, 1007 Camp St.; Boston, 80 Federal St.; San Francisco, 152 Fremont St.; Los Angeles, 1220 South Maple Ave.; Canada, Toronto Type Foundry Co. Ltd., Toronto. Distributors Throughout the World

THE PROGRESSIVE INTERTYPE

Made Its Way by the Way It's Made

Text set on the Intertype in Cairo